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Eagerness vs. Vigilance: The Effects of CEO Regulatory Focus on Firm Innovation Behavior, Error Avoidance Behavior and Firm Reputation

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by

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Dedication

To my parents who always have supported me and instilled the confidence in me to pursue this crazy dream at a time in my life when it may not have seemed logical. Their pride in my accomplishments - big and small - has always inspired me to be a better man, son and brother. To my sister and brother-in-law who's unwavering support of my journey has kept me going through the highs and lows of this process. To my nieces who's unconditional love has always been a source of inspiration, and who's own growth into such amazing young women gives me such pride and hope that they will be in my class some day in the near future.

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I develop and empirically test a model of the effects of CEO regulatory focus on firm actions and firm reputation. I use regulatory focus theory to unpack the differences in firms' strategic actions, specifically innovation behavior, operationalized by new product introductions, and mistake avoidance behaviors, operationalized by product recalls, and the effect of CEO regulatory focus on firm reputation. Regulatory focus theory has identified two motivators of behavior: promotion focus and prevention focus. I characterize CEO promotion focus as strategic eagerness, when CEOs influence their firms to execute actions in pursuit of accomplishments or successful "hits", and CEO prevention focus as strategic vigilance, when CEOs influence their firms to execute actions in order to avoid mistakes and to maintain a sense of safety. These different behavior profiles are theorized to result in different levels of product innovation and product recalls for firms within the U.S. automobile industry. CEO regulatory focus is also theorized to have direct or indirect effects on multiple aspects of firm reputation - specifically, firm prominence and reputation for quality. I test these hypotheses through text analysis of firm letters to shareholders and further empirical study of the global automotive industry in the U.S. from 1996-2010. The impact of regulatory focus on

product introductions and product recalls and the direct and mediated effects of strategic eagerness and strategic vigilance generated mixed, but encouraging, results. This study extends the influence of CEO regulatory focus on strategic actions and expands the micro-foundational influences on firm action logics.

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Chapter 1 - Introduction

Modern strategy literature has made a concerted effort to delve into the influences on CEO behavior (Finkelstein, Hambrick, & Cannella, 2009; Hambrick, 2007; Hambrick & Mason, 1984) and how that behavior influences firm-level actions (Carpenter, Geletkanycz, & Sanders, 2004). The CEO - and by extension, the top management team - sets the agenda for firm behavior and shapes organizational design, while bringing his or her own influences and perspectives to the position (Lewin & Stephens, 1994; Miller & Toulouse, 1986). CEO personality characteristics are "not only reflected in their personal preferences and behaviors but also in the strategies, structure, and performance of the organizations they lead" (Resick, Whitman, Weingarden, & Hiller, 2009: 1365). CEOs have been found to have varying degrees of influence on firm strategy and the factors influencing that variability stretch from CEO personality (Nadkarni & Herrmann, 2010) to CEO discretion (Finkelstein & Hambrick, 1990) to board of directors influence (Westphal & Fredrickson, 2001) to external industry factors (Porter, 1979) , among many others. The upper echelons perspective (Hambrick & Mason, 1984) attempts to delve into the "black box" containing the insights into influences and sources of CEO behavior, but remains in search of a comprehensive picture of all of the elements within that black box.

The management literature continues to call on researchers to develop a better understanding of the psychological and personality characteristics of CEOs and how these factors affect firm strategy and performance. Chatterjee and Hambrick (2007) explain this ongoing interest in the connection between CEO characteristics and firm behavior remains important because of the influence CEOs have on firm composition and outcomes. The call for a deeper understanding of the connection between CEO personality and firm outcomes is not new. In examining the connection between organizations and individuals, Staw observed that "because it is possible to identify key actors in important organizational decisions, psychological research can be applied to

these individuals in order to explain organizational actions" (1991: 812). Finkelstein, Hambrick and Cannella advise that "if we wish to understand the strategic choices and performance of organizations . . . we must examine and understand their top executives" (2009: 49). Staw asserted that "psychological theories can strengthen and add theoretical substance to macro models by providing the underlying rationale or missing process mechanism" (1991: 810-811). Staw offered that "one could hypothesize a direct linkage between the personality profile of the CEO ... and the cultural profile of the organization" (1991: 812) and challenged researchers to find answers to "not whether psychological tendencies exist, but whether we can expect them to affect additively the resultant actions, policies, or decisions of the organization" (1991: 815).

My dissertation seeks to understand how different strategic orientations emerge (McMullen & Zahra, 2009) through the influence of CEO personality. I investigate how a chief executive officer's regulatory focus leads to variability in firms' strategic actions, and how CEO regulatory focus may directly and indirectly affects firm reputation (Fombrun & Shanley, 1990; Rindova, Williamson, Petkova, & Sever, 2005; Rindova, Petkova, & Kotha, 2007). In particular, I explain how the variation in goal pursuit influenced by CEO regulatory focus affects firm behavior and firm reputation. The strategy literature has offered a number of characterizations for firms when behaviors split along different lines in pursuit of opportunity, including prospector/defender (Miles & Snow, 1978); exploration/exploitation (March, 1991); and cost leader/differentiator (Porter, 1985). However, each of these characterizations of firm strategy identifies a split in approaches but lacks a clear mechanism that explains the behavior.

In this dissertation, I draw on regulatory-focus theory (Crowe & Higgins, 1997; Higgins, 1997; 1998) to theorize how the CEO's regulatory focus may influence a firm's strategic actions. Regulatory focus theory describes two distinct systems of behavior in pursuit of goals - promotion focus and prevention focus. Promotion focus characterizes goals as objects of accomplishment and targets of aspirational behavior, while prevention focus characterizes goals as obligations that represent safety and security (Higgins, 1998). Importantly, regulatory focus theory asserts that entities with different regulatory

foci can have the same goals, but may develop distinct approaches to achieving those goals. Of particular interest to strategy scholars, the two regulatory foci can "trigger different strategic inclinations and tactical preferences" (Higgins, 1998: 13). Exploring the link between CEO-level regulatory focus and firm action logics (Bacharach, Bamberger, & Sonnenstuhl, 1996) may enable greater understanding of why firms take different approaches to competing - despite common profitability and growth goals and leveraging similar resources. Two examples of high-profile CEOs with distinct perspective that characterize promotion and prevention focus are the words of Dell Computer's Michael Dell and Intel's Andy Grove. First, Dell illustrates a decidedly promotion focus orientation: "Don't spend so much time trying to choose the perfect opportunity, that you miss the right opportunity" (Dell & Fredman, 1999). Conversely, Intel's Andy Grove seems centered on a prevention focus: "Only the paranoid survive … I worry about products getting screwed up, and I worry about products getting introduced prematurely" (Grove, 1996).

Firm actions motivated by CEO-level promotion focus can be characterized as strategic eagerness, which leads to pursuit of accomplishments of successful "hits", and firm actions motivated by CEO-level prevention focus as strategic vigilance, which leads firms to seek to avoid mistakes and meet obligations or adhere to industry norms. I theorize that these different strategic approaches are theorized to result in different levels of innovation and mistake avoidance behavior for firms. I then examine the mediating effects of these different strategic behaviors on the relationship between CEO regulatory focus and firm reputation - specifically, a two dimensional model of firm reputation encompassing prominence and a reputation for quality (Rindova et al., 2005). New product introductions, reflecting strategic eagerness, are theorized to positively influence a firm's prominence (Rindova et al., 2005). Strategic vigilance, reflected in fewer product recalls, is theorized to positively influence a firm's reputation for product quality. By considering the effects of the two regulatory foci on different action logics, I am able to examine differing effects of strategic eagerness and vigilance, rather than simply proposing a dichotomous outcome of one foci. I examine these relationships in the

context of the automobile industry in the U.S. through the study of new products introductions and product recalls from 1995-2010. Strategic eagerness and strategic vigilance are derived from the analysis of the language used by the CEO in the annual letter to shareholders, while the reputation measures are derived from *Consumer Reports* surveys and media mentions.

At various levels of analysis (i.e., individual, group and firm levels) promotion focus is concerned with advancement, growth and accomplishment (i.e., ideals) in pursuit of positive outcomes, while prevention focus is concerned with protection, safety and responsibility (i.e., oughts) in pursuit of avoiding negative outcomes (Higgins, 1998). Individuals may achieve a goal whether they are promotion or prevention-focused, but the strategies employed to achieve that goal may differ based on their regulatory focus (Higgins, 1998). Regulatory focus theory has been developed at the individual level - through laboratory experimentation - and subsequently extended to a group-level construct. Recently, regulatory focus has emerged in the management literature primarily in the examination of the influence of regulatory focus on entrepreneurial behavior

Strategy scholars have begun to consider the influence of regulatory focus at the firm level. Das and Kumar (2011) propose that firm level regulatory focus affects firm alliance strategy. The authors posit that a firm's regulatory focus is reflected in the dominant coalition, and this collective regulatory focus may shape the prevailing cultural orientation in the firm (Das & Kumar, 2011). Promotion-focused firms are expected to be more concerned with maximizing the return in a risk-return dilemma and more tolerant of a partner's opportunistic behavior, while prevention focused firms are expected to be more concerned with minimizing the risk of a risk-return dilemma and less tolerant of a partner's opportunistic behavior (Das & Kumar, 2011). However, these expectations have not been tested empirically.

Central to this study, Kark and Van Dijk (2007) examine the process by which CEOs can prime firms' regulatory focus through a variety of actions, words and symbols. The authors (Kark & Van Dijk, 2007) assert that the CEO's character and regulatory focus can embody the organization's identity and values, and the CEO's behavior can

serve as a role model for the rest of the organization to emulate. CEO's can employ symbolic, verbal and performance acts aimed at the broader organization to prime an organization's regulatory focus. Also, leaders can display emotions that communicate attributes of a promotion or prevention focus, such as happiness or dejection for promotion focus or anxiety or serenity for prevention focus, that can permeate the organization. Finally, CEOs can prime an organization's regulatory focus by shaping the work context of the organization - through selection of specific group tasks, allocation of rewards or the composition of the task structure. Kark and Van Dijk (2007) propose that CEOs can shape an innovation oriented culture by executing promotion-focused priming activities or a quality or efficiency-oriented culture by executing prevention-focused priming activities. However, these expectations have not been tested empirically.

I chose the auto industry for this study because it provides an environment featuring large, publicly traded firms of relatively similar sizes, but with diverse product lines, which provided me with significant variability in strategy, market share and leadership styles. While the industry is highly competitive and capital intensive, the majority of the firms have existed for a number of years and there have been few new entrants. Within the auto industry, we have seen the influence of CEO words and images on priming an organization's culture with the introduction of the "Quality is Job 1" campaign by Ford Motor Company in the early 1980s (Banham, 2002). Ford, facing increased competition from lower-priced, higher quality vehicles from Japanese manufacturers and a lackluster quality record within its own manufacturing processes and facilities, needed a new approach to improve quality and gird its employees for the competitive battle with the Japanese manufacturers. Working in collaboration with the United Auto Workers union (UAW), Ford CEO Philip Caldwell introduced the "Quality is Job 1" slogan to employees and to the public through advertising campaigns and face-to-face with Ford's employees. Banham explains in his history of Ford that "Caldwell articulated the mission before all Ford workers - 'Quality is Job 1'. [The slogan] now permeated the culture at Ford facilities all over the world. 'Quality is Job 1' was more than a popular advertising message ... " (2002: 122). A component of the

communications to employees to change Ford's culture included the admission by Ford Executive Vice President Red Polling to the UAW that "... quality had to improve ... [and] the difference between Ford and its Japanese competitors was not the quality of the workers but Ford's inferior management philosophy, which did not emphasize continuous improvements in product quality" (Banham, 2002: 122).

I investigate the influence of CEO regulatory focus by building on recent work by Gamache, McNamara, Mannor and Johnson (2013) which investigates the influence of CEO-level regulatory focus on firm acquisition activity. Gamache et al. (2013) use letters to shareholders to operationalize CEO regulatory focus. The authors found that that promotion-focused CEOs are more likely to undertake acquisitions, and that CEO regulatory focus is a distinct attribute that influences firm strategic choices. My study extends this emerging work on the influence of CEO regulatory focus on firm actions both theoretically and empirically. My theory leverages the variation in tactics and strategies motivated by regulatory focus theory at the CEO level, and suggests that CEO promotion and prevention focus manifest in different firm strategic behaviors. New product introductions and firm recalls are the specific firm behaviors that I theorize CEO-level regulatory focus will influence. These two firm actions, new product introductions and product recalls, capture vital processes for firm growth and performance (Katila & Ahuja, 2002). Each of these constructs could be considered extreme examples of the eagerness and vigilance behaviors proscribed by regulatory focus theory. By examining elements at the far ends of the behavioral spectrum, I may be able to generate greater insight into the effects of CEO-level regulatory focus on firm actions and the influence of those firm actions on firm reputation.

I use computer-aided text analysis to capture CEO-level regulatory focus, and a unique dataset of product innovation data in a dynamic industry to test my hypotheses. As shown by Gamache et al. (2013) and other strategy literature (Abrahamson & Hambrick, 1997; D'Aveni & MacMillan, 1990), text analysis of letters to shareholders is a valuable approach to investigating difficult to measure constructs such as discretion, innovativeness and regulatory focus.

Recently, the management literature has reaffirmed the call for connecting micro concepts with macro-level organization research (Chen & Miller, 2012). Chen and Miller explain that the exploration of firm strategic actions represents "an unexplored but fertile domain for integrating ... macro and micro perspectives" (2012: 163). This dissertation attempts to examine the effects of a CEO's regulatory focus (a construct that emerged from the micro literature) on innovation behavior and product recalls (macro level firm actions). I construct a longitudinal database of new product introductions and product recalls to measure specific firm actions. I measure reputation for quality through the use of *Consumer Reports* automotive problem reports and prominence is measured through text analysis of articles in the *Wall Street Journal* and other major national newspapers.

SIGNIFICANCE OF THE STUDY

My study theorizes on the potential effects of CEO-level regulatory focus on strategic actions and firm reputation. By empirically testing the influence of CEO regulatory focus on firm actions, I contribute to the continuing expansion of the upper echelons perspective into the psychological and behavioral influences on firm actions. With firms actions as a critical component of my analysis, the study also helps bridge the connections between upper echelons and competitive dynamics research. By testing hypotheses addressing the drivers of firm actions, this study expands the understanding of the influences on firm actions, and can facilitate greater consideration of CEO characteristics when evaluating firm action logics.

Additionally, the study aims to expand the knowledge of the antecedents of firm reputation, extending work begun by Rindova and colleagues (Rindova et al., 2005; Rindova & Martins, 2012; Rindova, Petkova, & Kotha, 2007). Recently, management scholars have begun examining the relationship between firm actions and firm reputation (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006; Fombrun, 1996; Rindova et al., 2005; Rindova et al., 2007; Williams, Schnake, & Fredenberger, 2005). My study can benefit from the momentum generated by these earlier studies and contribute to the ongoing

study of antecedents of firm reputation. Finally, the study furthers the use of text analysis as a means of delving into CEO behavioral influences.

STRUCTURE OF THE DISSERTATION

The remainder of this dissertation is organized as follows. Chapter 2 provides a literature review of the critical construct to my study, regulatory focus. Further, regulatory focus is differentiated from other firm-level constructs that may influence firm behavior, such as entrepreneurial orientation. I also discuss other CEO-level influences on firm behavior - including hubris, core self evaluation and narcissism - that are prevalent in the management literature, and have been used to explore the psychological influences on firm action that are at the core of the upper echelons perspective.

Chapter 3 presents theory development regarding the influence of CEO-level regulatory focus on firm behaviors, and the subsequent influence of firm behavior on firm reputation. The model outlines hypotheses addressing the effects of CEO-level regulatory focus on new product introductions and product recall behaviors. I propose that firms led by a CEO with a promotion focus will differ from firms led by a CEO with a prevention focus in the size, diversity and conformity to industry norms of their new product introductions. Further, firms led by a CEO with a prevention focus will behave differently from promotion-focused CEOs when executing mistake response behaviors, specifically issuing product recalls. I offer hypotheses on the direct effects of CEO regulatory focus on multiple facets of firm reputations. The model then predicts the mediating effects of the firm behaviors on the relationship between CEO regulatory focus and multiple facets of firm reputation, including prominence and reputation for quality.

Chapter 4 outlines the research sampling frame, data sources and methodology of the study. Chapter 5 presents the results of my study, and Chapter 6 discusses the implications of my findings, the contribution of this dissertation to theory and practice, the limitations of the study and the opportunities for future research.

Chapter 2 - Literature Review

The purpose of this dissertation is to develop a theory addressing how a regulatory focus orientation at the CEO level affects innovation and product recall behaviors at the firm level, and how these actions influences firm reputation. To do this, the study uses the regulatory focus literature, particularly the work extending the literature to the influence of individual regulatory focus on groups and organizations. Regulatory focus should be considered a separate construct beyond the various psychological constructs previously examined in the management literature. This chapter reviews the work on regulatory focus theory in psychology at the individual and group levels of analysis. Additionally, I present a review of other psychological influences on CEO decision making and firm actions that have been explored in the upper echelons literature.

CEO Level Influences on Firm Actions

The influence of the CEO's personality on firm outcomes is of ongoing interest to a broad array of management scholars. In their examination of the potential influences on firm strategic actions, Finkelstein, Hambrick and Canella (2009) discuss two primary categories: psychological properties (i.e., values, cognitive models and other personality elements) and observable dimensions (i.e., CEO functional background, tenure, and education). Psychological properties can provide a "potential causal link to the executive behaviors" and form the "basis for which the executive filters and interprets stimuli" (Finkelstein et al., 2009: 50). The authors explain that "these psychological characteristics have substantial influence on the executives eventual construed reality and, in turn, on strategic choices and organizational performance" (Finkelstein et al., 2009: 82).

The management literature has examined a variety of CEO-level psychological and personality influences on firm actions, including hubris (Tang, Li, & Yang, 2012), core self evaluation (Hiller & Hambrick, 2005; Simsek, Heavey, & Veiga, 2010),

narcissism (Chatterjee & Hambrick, 2007), and the Big 5 personality traits (Nadkarni & Herrmann, 2010). The recent work considering the effects of the CEO's regulatory focus on firm action (Gamache, McNamara, Mannor, & Johnson, 2013; Kark & Van Dijk, 2007) follows in this tradition. Scholars have long called for strategy research to better integrate individual traits and their effects on firm actions and firm performance. Kark and van Dijk (2007) proposed that top managers can prime the organization to adopt a particular regulatory focus, and Staw (1991) considered this prospect almost two decades earlier.

One of the CEO personality traits that has been studied to influence firm actions is hubris. Tang, Li and Yang (2012) consider how CEO hubris, defined as an ego-driven and self-aggrandizing individual who overestimates the accuracy of his own predictions, influences firm performance and innovation. The authors assert that hubristic CEOs will focus greater attention on innovative projects and direct greater resources to execute these projects. The authors used two studies, including a survey of Chinese executives and a longitudinal study of U.S. high-tech firms patenting activity, to test their hypothesis of CEO hubris leading to greater innovation. In both studies, the authors find a positive relationships between CEO hubris and firm innovation; using different measures of hubris and firm innovation adding further robustness to their findings (Tang et al., 2012).

Beyond hubris, scholars have examined the construct of core self evaluation (CSE) (Judge, Locke, & Durham, 1997), which reflects the fundamental appraisals individuals make about their self-worth and capabilities and encompasses the traits of self esteem, generalized self-efficacy, emotional stability and locus of control (Chang, Ferris, Johnson, Rosen, & Tan, 2012), and its influence on firm-level actions. Hiller and Hambrick (2005) offer a number of propositions regarding the influence of high levels of CEO core self evaluation on firm behaviors. Among the core propositions, Hiller and Hambrick (2005) propose that CEOs with high levels of CSE will pursue large-stakes initiatives, strategies deviating from industry norms and their firms will likely deliver extreme performance - delivering both big wins and big losses. Simsek, Heavey and Veiga (2010) studied the effects of CSE on firm actions by exploring the influence of a

CEO's core self evaluation on a firm's entrepreneurial orientation. The authors (2010) proposed that CEOs with higher core self-evaluation will be more likely to perceive the upside potential of entrepreneurial opportunities as a result of their belief that they can master their environment and their abilities will result in positive outcomes. In a broad survey of approximately 130 firms in Ireland, the authors found that a CEO's CSE positively influenced their firm's entrepreneurial orientation, particularly in industries with greater environmental dynamism.

In addition to hubris and core self evaluation, Chatterjee and Hambrick (2007) examine CEO narcissism and its effects on firm actions. The authors differentiate narcissism from hubris and core self evaluation, with one of the critical differentiators being the narcissist's unending need for affirmation and applause from others, and predict that narcissistic CEOs will be drawn to strategic dynamism and grandiosity (Chatterjee & Hambrick, 2007). Narcissistic CEOs will be impelled to take actions that defy convention and actions that generate drama. As a result, these actions were predicted to deliver extreme and fluctuating firm performance. Regarding specific firm actions, the authors confirmed their hypothesis that more narcissistic CEOs will execute larger and a greater number of M&A transactions than less narcissistic CEOs.

In their extensive examination of the influences and outcomes of strategic leadership, Finkelstein, Hambrick and Canella (2009) group core self-evaluation, narcissism, hubris and overconfidence under a common umbrella of positive self regard. Each of these personality factors appears to exert influence on CEO behavior and, ultimately, on firm actions. However, regulatory focus theory appears to present novel influences on CEO behavior that are not accounted for in the factors previously examined in the management literature. Regulatory focus orientation does not incorporate an individual's self evaluation - which is at the core of the self regard personality characteristics previously explored in the management literature - and seeks to unlock a more fundamental driver of behavior that is resident in individuals no matter the individual's self regard. Regulatory focus theory may provide strategy scholars with a new perspective on examining, evaluating and predicting firm behavior through the

further exploration of the "black box" containing psychological and behavioral influence on CEO decision making. I present additional detail regarding the regulatory focus literature in the section below.

REGULATORY FOCUS THEORY

Regulatory focus theory (Higgins, 1997; 1998) was developed to explain different motivational systems associated with an individual's self-regulating behavior. Higgins (1997) argued that two fundamental human emotions - pleasure approach and pain avoidance - manifest in two different behavioral approaches to achieving desired end states: a promotion focus (approach or eagerness) and a prevention focus (avoidance or vigilance). Promotion focus individuals are concerned with advancement, growth and accomplishment (i.e., ideals) in pursuit of positive outcomes. Prevention focus individuals are concerned with protection, safety and responsibility (i.e., oughts) in pursuit of avoiding negative outcomes (Higgins, 1998).

GENERAL OVERVIEW. According to Molden, Lee and Higgins, promotion focus and prevention focus "are fundamentally distinct in how [the two foci] are represented and experienced, and [the two foci] have fundamentally different effects on the processes of evaluation, judgment and decision making, and goal pursuit" (2008: 184). Crowe and Higgins (1997) demonstrated the differences between the eagerness behaviors of a promotion focus and the vigilance behaviors of a prevention focus through an experiment where individuals who did well on an initial memory task would get to perform a previously selected 'liked' activity (the promotion-focused framing) or by not doing poorly on the memory task the participant would not have to do the disliked task (the prevention-focused framing). The study demonstrated that promotion-focused individuals had a bias toward saying 'yes' in the recognition memory task, while the prevention-focused subjects had a conservative bias of saying 'no' (Crowe & Higgins, 1997). While all individuals in this experiment were tasked with achieving a similar goal (strong performance on a memory test), their strategic choices differed.

Furthering the study of eagerness versus vigilance, Förster and colleagues (1998) examined the depth of commitment individuals possessed in their promotion- or prevention-focused strategies. In a set of laboratory experiments, the authors tasked subjects with solving anagrams under both chronic and induced promotion or prevention focus. As the subjects approached the end of the anagram task, those with a promotion focus showed a greater increase in eagerness than vigilance, and the opposite was true for those with a prevention focus (Förster et al., 1998). The commitment to what "ought" to be done was strong and prevention focused individuals attempted to avoid the pain of making a mistake.

In these various studies, individuals with a promotion focus appeared to consistently demonstrate a predilection for a sense of eagerness to ensure hits (Förster et al., 1998). By seeking to increase their opportunities to achieve gains, promotion focused individuals chose strategies focused on achievement and accomplishment. Conversely, individuals with a prevention focus consistently chose vigilant strategies centered on avoidance and safety. The commitment to what "ought" to be done is strong and prevention focused individuals attempt to avoid the pain of making a mistake.

GOAL PURSUIT. The process of identifying and pursuing goals has been found to differ significantly between those having a promotion or prevention focus. Shah and Higgins (1997) asserted that the expectancy-value interaction with different regulatory foci will affect goal selection. Through a variety of laboratory experiments (i.e., anagram completion, university class selection, graduate entrance exam commitment), the accomplishment and achievement orientation of a promotion focus increased the positive interaction between expectancy and value on goal commitment. Conversely, the prevention focus perspective of responsibility and necessity shifts the interaction to a negative direction. The authors conclude that "the promotion focus on accomplishment strengthens commitment to maximizing expected utility, while a prevention focus on responsibility strengthens commitment to doing what is necessary or what can be done with assurance" (Shah & Higgins, 1997: 455).

Beyond the effect of regulatory focus on the expectancy-value goal pursuit decision, Liberman and colleagues (1999) explored the influence of regulatory focus on an individual's openness to new experiences and willingness to change course from a current goal. Promotion-focused subjects were more willing than prevention-focused subjects to start a new task after the interruption of an existing task rather than continue the previous task (Liberman et al., 1999). Additionally, subjects with a promotion focus were more willing to exchange an object in their possession for an alternative object (i.e., exchanging a pen subjects received for participating in the study for another pen of similar value) than prevention-focused individuals (Liberman et al., 1999). Individuals with a promotion focus were more open to considering change than prevention-focused individuals (Liberman et al., 1999), particularly since the new alternative may have the potential benefit of providing advancement or accomplishment and increase the chances for a hit.

Promotion and prevention focus may facilitate different means by which to pursue goals as well as an individual's commitment to those choices. Once a goal is selected, individuals may elect to prioritize either speed or accuracy in completing the goal (Molden et al., 2008). Promotion focused individuals tend to prioritize speed over accuracy, while a prevention focus generates the opposite effect (Förster, Higgins, & Bianco, 2003). With a promotion focus characterized by eagerness to pursue hits (Crowe & Higgins, 1997), Förster and colleagues (2003) find that promotion focused individuals emphasized speed over accuracy in a drawing task, while prevention focus individuals centered on accuracy over speed. Additionally, the study demonstrated that as individuals approached the completion of the task, promotion focused individuals increased their speed and decreased their accuracy while prevention focused subjects increased their accuracy and decreased their speed (Förster et al., 2003).

The two regulatory foci have been shown to influence the choice, commitment to and performance of particular goals. A promotion focus drives individuals towards an eagerness to achieve, and this leads to choosing goals with greater potential rewards than prevention-focused individuals. Promotion-focus individuals may abandon a previous

tactic or strategy if they identify a potentially more attractive one, and attempt to achieve that goal with greater speed than an individual with a prevention focus. The overriding motivation to avoid errors of omission may propel promotion-focused individuals toward a diverse set of aggressively pursued, higher risk and higher reward goals.

GENERATING ALTERNATIVES. In their eager pursuit of goals, promotion-focused individuals are expected to generate more alternatives to ensure hits, thereby avoiding the omission of any potential solutions (Higgins, 1998). Prevention focused individuals, conversely, could be driven by their state of vigilance to limit alternatives, thereby increasing their chance to reject potentially incorrect options (Higgins, 1998). Liberman, Molden, Idson and Higgins (2001) tested this conjecture through the evaluation of individuals' considerations of others' actions.

In the Liberman et al. (2001) experiments, subjects read about a focal individual's helpful behavior and were then asked to evaluate explanations for the person's behavior. Promotion focused individuals identified more explanations for the behavior than those with a prevention focus (Liberman et al., 2001). The promotion focused subjects also were less certain when predicting the focal individual's future helpful behavior, likely due to the greater number of alternatives identified for the focal individual's behavior (Liberman et al., 2001). Further, Molden and Higgins (2004) tested the hypothesis that promotion focused individuals would generate more alternatives than prevention-focused individuals when considering vague behavior and fewer alternatives than prevention-focused individuals when faced with ambiguous behaviors. In cases of vague information (where the evidence for any one alternative was weak), promotion focused individuals considered a greater number of alternatives than prevention focused individuals (Molden & Higgins, 2004) to explain the behavior. When the information was ambiguous (a number of highly-developed alternatives were possible), the promotion focused individuals displayed an eagerness for hits by more readily choosing one alternative, while the prevention focused individuals demonstrated their vigilance by failing to rule out any of the alternates, for fear of making a mistake (Molden & Higgins, 2004).

Friedman and Förster (2001) expanded the investigation of differences in alternative generation beyond the evaluation of behavior. The authors examined the different influences of prevention and promotion focus on creativity. Freidman and Förster (2001) found that individuals primed for a promotion focus generated a greater number of creative solutions than prevention-focused individuals when tasked with finding uses for a brick. The identification of a greater number of solutions is attributed to a more "adventurous" processing style of promotion focused subjects (Friedman & Förster, 2001) - driven to achieve their goals and ensure no potential solution was omitted.

In their eagerness to achieve their goals and ensure hits, individuals with a promotion focus are motivated to generate a large number of alternatives when faced with a variety of challenges. While Friedman and Förster (2001) assert that promotion focus individuals may exhibit a more "risky" decision making style, this bold, achievement-oriented position may serve individuals well in the types of decision making scenarios where outcomes are uncertain and no clear pathways to a goal are evident.

EXECUTION AND JOB PERFORMANCE. Scholars have also studied how regulatory focus affects work-related performance. In a recent meta analysis, Lanaj and colleagues (2012) examined the influence of regulatory focus on five job performance dimensions: task performance, organizational citizenship behavior (OCB), counterproductive work behavior (CWB), innovative performance, and safety performance. In their meta-analysis of 97 articles, the authors found that regulatory focus has predictive validity above and beyond established motivation, personality and attitude predictors (Lanaj et al., 2012).

Specifically, promotion focus was positively related to task performance, OCB and innovative performance. A promotion-focused individual's concern with achievement, perseverance, and greater propensity to take risks all contributed to the positive relationship with these work outcomes. Promotion focus, however, was found to have a negative relationship with CWB (Lanaj et al., 2012), which was counter to the authors' expectations. The negative relationships with counterproductive work behavior

may be attributable to a promotion focused-individual electing to avoid CWB since it could negatively affect the chances for success of their other work tasks. CWB may not align with an individual's perceptions of what the ideal behaviors are in a work setting. Prevention focus positively related to safety performance and CWB, although the latter relationship was called into question by the authors and may be the result of unclear coding procedures (Lanaj et al., 2012). Critically, the differing behavioral motivations of promotion or prevention focus enabled researchers to isolate performance effects beyond the previously accepted predictors.

GROUP-LEVEL REGULATORY FOCUS. Beyond the exploration of the behaviors and influences exerted by an individual's regulatory focus, scholars have examined a group level regulatory focus. Levine, Higgins and Choi (2000) examined how group members' behavior would converge toward a shared reality and how the shared perspective would influence strategic choices. The authors predicted that once a group developed a shared reality, the group's strategic orientation would adopt a particular bias, and groups with a promotion focus would adopt riskier strategies than prevention-focused groups. The authors tested their hypotheses through group recognition memory tasks on groups primed for promotion or prevention focus based on rewards for their performance. Levine and colleagues (2000) found that groups with a promotion focus made riskier decisions than those converging on a prevention focus. The converged perspective persisted over time - particularly when group membership remained constant.

Building on the Levine et al. (2000) work, Faddegon et al. (2008) developed a collective regulatory focus that uses the influence of social identity theory. Beyond any task-specific influence or situational priming, the authors assert that group members will self-categorize themselves with a particular regulatory focus that is normative or prototypical for their group and potentially independent of their own chronic regulatory focus (Faddegon et al., 2008). Additionally, Faddegon and colleagues (2008) demonstrate through two experiments that not only did individual group members adopt a group-level regulatory focus, this collective regulatory focus influenced the individual group member's behaviors to align with the group's regulatory focus.

Florack and Hartmann (2007) studied financial investment decisions made by small groups that were primed for prevention or promotion focus. Their experiments demonstrated that a group-level regulatory focus took time to develop, but once in place, the differences in motivations were evident. Groups primed for prevention focus were more risk averse and ultimately decided to invest in a secure investment, while groups primed for a promotion focus chose riskier investments (Florack & Hartmann, 2007).

More recently, Rietzschel (2011) employed the collective regulatory focus concept to predict team-level innovation activity. Rietzschel (2011) segmented the innovation process into three phases: 1.) idea generation - the proposal or generation of a creative idea; 2.) idea promotion - the selling of the idea to various stakeholders that requires the willingness to invest resources; and 3.) idea realization - the actual implementation of the creative idea. In his empirical study, Rietzschel (2011) demonstrated that team level promotion focus increased a team's idea generation and idea promotion output, while a team-level prevention focus did not.

Through a survey of project teams in several Dutch organizations, Rietzschel (2011) measured the team-level regulatory focus construct and identified its influence on certain elements of the innovation process. By adapting the regulatory focus questionnaire developed by Van Stekelenburg and Klandermans (2003) - which questions respondents' ratings of a series of 14 proverbs (i.e., he who does not dare, does not win) related to either promotion or prevention focus - Rietzschel surveyed project team members on their rating of how strongly the 14 proverbs apply to way their entire project team worked. Scores on the 7-point scales were averaged for each team for collective promotion and prevention focus scores for each team. Team innovativeness was derived from a separate survey of the team leaders, and asked the team leaders to indicate how often (1=never; 7=always) their team performed each of the three innovation components. The three components - generation, promotion and realization - were measured using a nine item scale from Janssen (2001).

Rietzschel (2011) employed structural equation modeling to test his proposed model. Team level promotion focus was found to be significant and positively predicted

idea generation as well as idea promotion. Team level prevention focus was not significant in predicting either component of the innovation process. Neither measure, team-level promotion or prevention focus, was significant in predicting innovation realization. Interestingly, the team-level regulatory focus was a stronger predictor of innovation promotion than innovation generation, which highlights the influence of regulatory focus on resource allocation decisions. Teams with a promotion focus were eager to invest resources in support of their various innovation ideas. In order to achieve their goals, promotion-focused groups needed to garner the resources needed for success.

Regulatory Focus Theory vs. Other Relevant Motivational Theories

Prospect Theory.

One potential challenge to the uniqueness of regulatory focus theory as a motivator of firm behavior would be its similarity or differences with prospect theory (Kahneman & Tversky, 1979). As explained by Levine, Higgins and Choi (2000), regulatory focus theory addresses individuals striving for accomplishment versus safety, while prospect theory addresses individuals approaching gains as desired end states versus avoiding losses as undesired end-states. According to Levine et al., (2000) two individuals are motivated by the same positive prospect of earning a cash payout, but the promotion-focused individual could view earning the money as an accomplishment, while the prevention-focused individual may consider earning the money as a responsibility to be fulfilled. Both individuals would be seeking a gain (i.e., the cash payout), but one could be seeking it with strategic eagerness, while the other could be seeking it with strategic vigilance. These motivations are therefore distinct from the motivations posited by prospect theory. The behavioral effects of regulatory focus are not characterized by a 'good versus bad' dynamic as one might assert under prospect theory, but rather two good outcomes influenced by the perspective of accomplishment versus safety (Higgins, 1998).

Entrepreneurial Orientation.

At the firm-level of analysis, regulatory focus may share some commonalities with the construct of entrepreneurial orientation (Covin & Slevin, 1991; Lumpkin & Dess, 1996). Entrepreneurial orientation (EO) is a reflection

of the organizational processes, methods and styles that firms use to act entrepreneurially - essentially "how" new product or market entry is undertaken (Lumpkin & Dess, 1996). Entrepreneurial orientation is a firm-level construct developed on the premise that firm entrepreneurial effectiveness is a phenomenon that can be measured in terms of firm performance (Covin & Slevin, 1991). Covin and Slevin (1991) emphasize that organizational actions make a firm entrepreneurial, and firm behavior is essential to the entrepreneurial process.

The entrepreneurial orientation literature (Covin & Slevin, 1991; Lumpkin & Dess, 1996) outlines five factors that underlie entrepreneurial orientation: autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness. Each of the factors may vary independently, depending on the environment and organizational context. Entrepreneurial orientation, however, does not appear to address the ex ante influences on firm-level entrepreneurial behavior, rather developing a characterization of firm behavior after the evaluation of firm actions in the five factor groupings.

Regulatory Focus in the Management Literature

Entrepreneurship Research.

The application of regulatory focus theory in management is in its nascency. Regulatory focus theory has begun to emerge in the management literature through work in entrepreneurship (Brockner, Higgins, & Low, 2004; Bryant, 2007; Dai, 2012; Hmieleski & Baron, 2009; Tumasjan & Braun, 2012). Brockner et al. (2004) present propositions addressing the most effective time for a promotion or prevention focus in the entrepreneurial process. The authors propose that a promotion focus, with its emphasis on eagerness and generating successful hits, would best serve an entrepreneur in the earlier stages of firm development. The eager identification of potentially successful business ideas motivated by a promotion focus would be beneficial to an entrepreneur. The authors also posit that the vigilance of a prevention focus would best suit an entrepreneur during the screening of ideas and during the due diligence process (Brockner et al., 2004). Brockner and colleagues (2004) also propose that a hybrid, or simultaneous promotion and prevention focus, is necessary

during other stages of the entrepreneurship process - namely fundraising and product rollout. The balance of eagerness and vigilance would best serve the entrepreneur when one motivational system might imperil the successful execution of the entrepreneurial opportunity.

Scholars have also explored how regulatory focus influences entrepreneurial intent and opportunity recognition (Baron, 2004). In an empirical study using undergraduates in a strategy course, McMullen and Shepherd (2002) find that as the benefit of a potential action increases, the entrepreneurial intentions of individuals increases, particularly in those with a promotion focus. McMullen and Shepherd (2002) hypothesized that a promotion focus would positively moderate the effect of an increase in the benefit of action (defined as increases in the net benefit of a "hit" and decreases in the net cost of "false alarms") on entrepreneurial intention. In addition, the authors posited that a prevention focus would positively moderate the effect of an increase in the cost of inaction (defined as decreases in the net benefit of a "correct rejection" and increases in the net cost of a "miss") on entrepreneurial intention. The authors successfully tested their hypotheses by priming the student subjects for promotion or prevention focus and framing the options and potential outcomes available to them as they assumed the role of a CEO contemplating the launch of a new product into a new market. Within these scenarios, the subjects indicated their likelihood of acting on the potential opportunity to launch the new product. In addition to the positive moderating effects of a promotion focus on the increases in benefits of action and entrepreneurial intention, the prevention focus positively moderated the positive effects of increases in the cost of inaction on entrepreneurial intention. The authors (2002) explain that the promotion focus effects on the increased benefits of action can be attributed to promotion-focused entrepreneurs considering their options in terms of gain and gain maximization.

Interestingly, McMullen and Shepherd (2002) explain that the positive moderating effects of prevention focus on entrepreneurial intention when the cost of inaction increases (which might be counter-intuitive on its face) can be attributed to

prevention-focused entrepreneurs assessing their options in terms of losses and loss minimization.

Tumasjan and Braun (2012) examined opportunity recognition through experiments with entrepreneurs in the United Kingdom. Participants were tasked with responding to the comments of a focus group; identifying the underlying problems with a product presented to the focus group; and providing solutions to the problems identified. The authors found that a promotion focus increased both the number of opportunities identified by entrepreneurs as well as the innovativeness of the opportunities identified (Tumasjan & Braun, 2012). Prevention focus, however, had no significant effect on opportunity recognition, and the authors suggest that the lack of promotion focus (rather than the presence of a prevention focus) may negatively influence opportunity recognition (Tumasjan & Braun, 2012).

In addition to examining entrepreneurial intent and opportunity recognition, scholars have begun to examine the effects of an entrepreneur's regulatory focus on firm performance. Hmieleski and Baron (2009) surveyed approximately 300 entrepreneur-led firms across both dynamic and stable environments. In dynamic environments, an entrepreneur's regulatory focus was found to affect new venture performance. Firms with entrepreneurs with a prevention focus experienced negative effects on performance in dynamic environments, which the authors ascribe to a prevention focused-individual's rigidity and unwillingness to change (Hmieleski & Baron, 2009). Interestingly, the authors found no effects of regulatory focus on firm performance in stable environments - which the authors define as ones where changes are smaller and more predictable. These environments may enable both prevention and promotion focused entrepreneurs to succeed despite their differing motivations.

Dai (2012) examined the influence of an entrepreneur's regulatory focus on a number of strategic attributes of start-up firms, including decision speed and comprehensiveness, number and prestige of customers, and number and prestige of strategic partners. Using a survey of entrepreneurs leading high-technology start-up firms, Dai (2012) found that entrepreneurs with a promotion focus positively influenced

decision speed, the number and prestige of customers, and the number and prestige of strategic partners. An entrepreneur with a prevention focus was found to increase decision comprehensiveness and decrease decision speed, while also increasing customer and strategic partner prestige. Interestingly, Dai (2012) hypothesized and found that both promotion and prevention focus would positively influence the prestige of customer and strategic partners. Promotion focused entrepreneurs would be expected to be inspirational and demonstrate better interpersonal skills than prevention focused individuals. These sharper communication skills enable new firms to more effectively convey their business ideas and facilitate productive communication between the focal firm, customers, strategic partners and other stakeholders. Additionally, Dai (2012) posits and finds that prevention focused individuals can also attract customers and strategic partners of high prestige. Prevention-focused individuals are valued by prestigious customers and strategic partners for their heightened attention to detail and greater internal consistency than promotion-focused individuals (Dai, 2012). The ability of both promotion and prevention focused entrepreneurs to achieve the same goal of attracting prestigious customers and strategic partners through highly divergent means is an empirical demonstration of one of the foundational elements of the regulatory focus construct, namely the variability in tactics and strategies used in pursuit of a goal (Higgins, 1998).

REGULATORY FOCUS THEORY IN OTHER MANAGEMENT LITERATURES. Beyond entrepreneurship, the management literature has begun to embrace the regulatory focus construct as one of growing interest across a variety of research streams. Weber and Mayer (2011) offer a variety of propositions regarding the effects of regulatory focus framing - characterizing an item, such as a contract, with a promotion or prevention focus - on the exchange relationship between contract parties. Among the effects of regulatory focus-framed contracts on relational governance, the authors posit that a contract framed with a prevention focus will act as a substitute for relational governance and a promotion focus framed contract will complement relational governance - where a transaction

requires flexibility, creativity or cooperation. Webber and colleagues (Weber, Mayer, & Macher, 2011) empirically examined the effects of a promotion framed contract on managing transactions and the relationships between parties. The authors established that a promotion framed contract component, specifically duration safeguards, elicits emotions and behaviors of the exchange relationship that reduces tensions in the negotiations of the contract (Weber et al., 2011).

Further, management and psychology scholars have begun to examine the effects of regulatory focus on firm level outcomes, including creativity (Wu, McMullen, Neubert, & Yi, 2008), exploration/exploitation (Kammerlander, Burger, Fust, & Fueglistaller, 2014), and new product development (Sedighadeli & Kachouie, 2013). In a study of matched pairs of leaders and employees in China, Wu and colleagues (2008) found that leaders with a promotion focus could use situational priming to increase employees' promotion focus and positively influence employee creativity - even to the point of being able to overcome the employees' chronic regulatory focus. Prevention focus, however, had no measurable effect of employee creativity. In a study of small and medium sized firms that surveyed CEO's in Switzerland, Kammerlander and colleagues (2014) established that CEOs with a promotion focus positively influenced both exploration and exploitation actions of mature firms. The study also confirmed the authors' hypothesis that a CEO with a prevention focus is negatively associated with exploration, but was not significant relative to the authors' expectations that a CEO prevention focus would be positively associated with exploitation (Kammerlander et al., 2014). The effects of a CEO with a promotion focus on exploration and exploitation were heightened by conditions of intense competition (Kammerlander et al., 2014). Finally, Sedighadeli and Kachouie (2013) investigate hypotheses that six factors could be influential in the success of new product development: commitment, regulatory focus, entrepreneurial orientation, social capital, international orientation, and future study. The authors surveyed a number of Iranian manufacturing executives and established that each of the six factors were important for new product development. Specific to regulatory focus, the authors indicate that both promotion and prevention foci were important in the

new product development process (Sedighadeli & Kachouie, 2013). Leader promotion focus was most important for new idea generation, while leader prevention focus would be beneficial in the idea screening stage (Sedighadeli & Kachouie, 2013). Each of these studies contributes to the understanding of the multifaceted influences of regulatory focus on firm activities, and that promotion and prevention focus may both contribute positively to firm outcomes - unlike many of the other leader psychological influences.

LEADER'S REGULATORY FOCUS AND FIRM-LEVEL BEHAVIORS. While the foundational work on regulatory focus centers on an individual's motivations (Higgins, 1997; 1998), three papers in the management literature have extended the theory to the firm level. Das and Kumar (2011) theorize that regulatory focus could be elevated to the firm level through an institutionalization of the consensus regulatory focus of the firm's dominant coalition. The dominant coalition could imbue the firm's culture with a particular regulatory focus that would shape group dynamics and firm behavior (Das & Kumar, 2011). The authors (2011) also offered propositions regarding differing firm behaviors surrounding alliance formation. A promotion-focused firm could be more tolerant of a partner's opportunistic behavior; more tolerant of interpartner conflicts; and would not hesitate to extract whatever knowledge it could from its partner. Prevention-focused firms would be less tolerant of a partner's opportunistic behavior and would not attempt to extract knowledge from a partner. Promotion-focused firms would be concerned with maximizing the return in a risk-return dilemma, while a prevention-focused firm would be most concerned with minimizing the risk of a risk-return dilemma. The authors explain that firms face similar problems as individuals with regards to ideals and oughts that underlie the regulatory focus logic, and their predictions align with what one might hypothesize about individuals' regulatory foci in the same situation.

In addition to the potential for a collective regulatory focus to permeate a firm's culture, other scholars are examining the influence of the individual CEO on an entire firm's regulatory focus. Kark and Van Dijk (2007) propose that a leader may be able to prime the regulatory focus of groups of followers that could lead to organizational level

outcomes. The authors (Kark & Van Dijk, 2007) assert that a leader can prime a group of followers to a particular regulatory focus through a variety of actions, including:

- the leader's representative character that embodies a group's identity and values. The leaders, through their behavior and regulatory focus, can serve as role models for the rest of their organization to emulate. The leader's behavior can shape the climate of the entire organization.
- a leader's specific symbolic, verbal and performance acts aimed at the broader organization can influence a organization's shared regulatory focus.
- the creation of a certain emotional environment (which the authors describe as leader-follower emotional contagion). Leaders may display emotions such as happiness or dejection to communicate a promotion focus, while emotions such as anxiety or serenity may assist in priming for a prevention focus.
- shaping the work context - through the selection of specific group tasks, allocation of rewards or the composition of the task structure. Each of these decisions can elicit different motivational orientations for the work group or organization as a whole.

Kark and Van Dijk (2007) assert that these varying behaviors can lead to an innovation-oriented culture (through the leader's promotion focus priming) or a quality or efficiency-oriented culture (through the leader's prevention priming).

Gamache, McNamara, Mannor and Johnson (2013) investigated the influence of CEO-level regulatory focus on firm behavior. Specifically, the authors argue that firms led by CEO's with a promotion focus will execute more acquisitions than CEO's with a prevention focus. The authors use letters to shareholders to determine CEO regulatory focus. Gamache and colleagues (2013) also considered the moderating effects of executive compensation (specifically stock options) on the effects of CEO regulatory focus. The authors determined that regulatory focus is a distinct attribute that influences strategic choices of managers, and affirmed their assertion that promotion-focused CEO's increased likelihood to execute acquisitions. Stock options do not effect CEO's promotion focus likelihood to act, but options have a countervailing influence on a prevention-focused CEO's reduced likelihood to pursue acquisitions.

CONCLUSIONS

In summary, regulatory focus theory has gained acceptance in the social psychology literature over the past 15 years as a primary influence on goal pursuit behavior. A great majority of the studies have tested the theory in the laboratory. In the field of management, regulatory focus theory has been used primarily to examine entrepreneurial decision making and action. A couple of recent papers have extended the influence of the construct to the firm level (Das & Kumar, 2011; Kark & Van Dijk, 2007), which potentially opens new avenues for exploration of firm behaviors and firm performance. This work raises the possibility that many avenues of firm behavior could be influenced by a CEO's regulatory focus. Equally interesting is the priming effects of CEO behavior outlined by Kark and Van Dijk (2007). The authors explain that a more proactive process of leadership can prime an organization for a specific regulatory focus. The authors assert that organizations primed for different regulatory foci will potentially make different strategic decisions and have lasting effects on firm culture (Kark & Van Dijk, 2007). Each of these studies suggest that the influence of a CEO's regulatory focus could be a critical factor in gaining a better understanding of the foundations of firm strategic actions.

In the next chapter, I develop hypotheses about a CEO's regulatory focus and its effects on firm actions. I propose hypotheses in which a CEO's regulatory focus affects a firm's new product introductions and product recall behavior, followed by a series of hypotheses predicting the influence of CEO regulatory focus on multiple dimensions of firm reputation. Finally, I develop a series of hypotheses examining the mediating effects of the firm actions - new product introductions and product recalls - on the relationship between CEO regulatory focus and firm reputation.

The regulatory focus construct captures two motivational systems (Higgins, 1997), and my theoretical model explains that CEO regulatory focus motivates different behaviors related to new product introductions and mistake avoidance behavior. Crossan and Apaydin (2010) highlight one of the critical takeaways from their recent review of the innovation literature is the need for more productive linkages of innovation outcomes

and firm performance. My model attempts to incorporate the influence of new product introductions and product recall behaviors on multiple facets of firm reputation, a critical non-financial firm performance measure.

Beyond the more traditional measures of firm performance (i.e., accounting and financial market performance) resident in many strategy studies (Venkatraman & Ramanujam, 1986), I analyze the non-financial performance effects of firm actions by examining firm reputation. Firm reputation has emerged as a critical intangible asset (Barney, 1991; Deephouse, 2000; Dierickx & Cool, 1989; Rao, 1994), and an important contributor to a firm's competitive advantage. A firm's reputation is constructed by stakeholders through the evaluation of a firm's ongoing behavior and can be a source of competition among firms (Fombrun & Shanley, 1990). A firm may make investments in developing its reputation - consider these the "flows" in the Dierickx and Cool (1989) resource model - in order to build its "stock" of accumulated reputation that is constructed by external stakeholders. Over time, a firm's reputation evolves as various stakeholders - customers, media, competitors, industry analysts and others - are exposed to a firm's behavior.

I examine the firm-level behavioral effects of CEO promotion and prevention focus by developing a series of hypotheses regarding new product introductions and product recall behavior. The first group of hypotheses address how a CEO promotion or prevention focus affects the a.) number; b.) diversity or c.) deviation from industry norms of a firm's new product introductions. The second group of hypotheses address how CEO regulatory focus affects product recalls. The third group of hypotheses address how CEO regulatory focus affects firm reputation for quality and prominence and the mediating effects of new product introductions and product recalls on the relationship between CEO regulatory focus and the two dimensions of firm reputation.

(Figure 1 presents a summary of regulatory focus-inspired behaviors and their relevance to the key variables of my study.)

Chapter 3 - Theory Development

As discussed in the previous chapter, existing literature suggests that a firm's actions may be influenced by its CEO's regulatory focus orientation. My research question guiding this study asks how does CEO regulatory focus influence firm strategic actions, and how does CEO regulatory focus and these actions influence firm reputation. Promotion and prevention foci clearly motivate different strategies and tactics for achieving goals (Higgins, 1998), and these different strategies motivated by the CEO's regulatory focus may be evident in firm conduct and performance. CEO regulatory foci may manifest not only in specific behaviors, such as a firm's eagerness to execute M&A transactions or a firm's vigilance to avoid issuing high yield debt in turbulent public markets, but more broadly to behavioral tendencies across multiple facets of firm behavior. I expect that strategic eagerness behavior will manifest in more innovative behavior, reflected in new product introductions. Similarly, I expect strategic vigilance to manifest in fewer product recalls.

OVERVIEW OF THE THEORETICAL MODEL. The entirety of my theoretical model is presented in Figure 2. The first components of my theoretical model encompass the influence of CEO-level promotion and prevention foci on firm strategic actions. CEO decision making shaped by a promotion focus, or strategic eagerness, is expected to influence firm behavior towards achieving firm goals through frequent, creative actions (Friedman & Förster, 2001; Higgins, 1998). CEO strategic eagerness will drive firms to generate more innovative ideas and be more willing to accept risk when considering potential actions (Florack & Hartmann, 2007; Levine, Higgins, & Choi, 2000). The collective logics of CEO strategic eagerness should manifest in innovative behavior (Rietzschel, 2011) and a greater propensity for errors, as CEOs drive firms to seek achievements and success in pursuit of their goals.

CEO decision making shaped by a prevention focus, or strategic vigilance, is expected to influence firm behavior in different ways. CEO strategic vigilance should prompt firms to keep safety and security (Higgins, 1997; 1998) in the forefront of their

selection and execution of strategic actions. Firms driven by CEOs with the logic of strategic vigilance will likely make more conservative choices regarding firm actions (Levine et al., 2000) and demonstrate a preference for stability and maintaining the status quo (Liberman, Idson, Camacho, & Higgins, 1999). Firms with a CEO motivated by strategic vigilance will still pursue goals, but the actions taken in pursuit of those goals will likely not resemble the actions of firms with a CEO motivated by strategic eagerness. I develop hypotheses to test the influences of CEO strategic eagerness and strategic vigilance on specific firm actions. In order to consider the performance effects of the strategic actions, I develop additional hypotheses regarding the influence of CEO strategic eagerness and CEO strategic vigilance on firm reputation. These relationships may be mediated by new product introductions or product recalls.

CEO Regulatory Focus and Firm Actions

In order to understand the foundations of firm strategic behavior, I first examine the effects of CEO regulatory focus on specific actions. A strategic action is defined as an "externally directed, observable competitive move carried out to improve the firm's relative competitive position" (Smith, Ferrier, & Ndofor, 2001: 12). Firm strategic actions have been a critical unit of analysis in the strategy literature - most directly in the competitive dynamics literature from its inception (Smith et al., 2001) - and serve as the basis for evaluation and comparison of performance outcomes based on interconnected actions and reactions (Ferrier, 2001). In their review of the competitive dynamics literature, Smith and colleagues (2001) explain that the majority of competitive dynamics literature evaluates firm strategic actions in light of their performance outcomes, and appears to leave any underlying firm behavioral influences unaddressed. With competitive dynamics rooted in the Schumpeterian and Austrian economics perspectives, actions are perceived as being motivated by exogenous forces such as industry conditions and subsequent changes to the competitive arena. It is not clear from the existing literature how specific CEO psychology would influence the firm actions at the heart of competitive dynamics.

In the competitive dynamics literature, the primary internal firm-level influences on firm actions are captured in the awareness-motivation-capability (A-M-C) construct (Chen, 1996; Smith et al., 2001), but limited attention is directed at underlying behavioral influences on actions. Smith et al. (2001) address the characteristics of the actor in the A-M-C framework, but these characteristics center on observable firm-level descriptors such as firm size, TMT demographics, market share, past performance and slack resources. CEO level behavioral and psychological influences on the framework are absent. Chen, Su and Tsai observe that "although the awareness-motivation-capability perspective has been applied to the investigation of interfirm rivalry, it has yet to be used for the study of prebattle competitor analysis" (2007: 104). Regulatory focus theory may enable us to unlock some of the CEO-level behavioral influences on firm strategic actions and contribute to the study of the actions on display in the competitive battleground.

The regulatory focus literature has examined a number of specific outputs of behavior influenced by promotion or prevention focus; including creativity (Friedman & Förster, 2001), decision speed (Dai, 2012; Förster, Higgins, & Bianco, 2003), financial risk tolerance (Florack & Hartmann, 2007), and idea generation (Brockner, Higgins, & Low, 2004; Rietzschel, 2011). In the context of the specific firm behaviors that I am studying here, new product introductions and quality failures, we may see the influence of CEO regulatory focus-influenced decision-making. First, I focus on the relationship between regulatory focus and innovation behavior, namely new product introductions. Second, I examine the relationship between regulatory focus and product recall behavior.

A variety of scholars in the management literature have examined the effects of new product introductions on firm outcomes. Zirger and Maidique (1990) and Eisenhardt and Tabrizi (1995) explain that new products introductions enable firms to adapt and better compete in dynamic environments. Sorescu and Spanjol's (2008) investigation of the consumer products industry demonstrated that new products can influence various elements of firm performance - normal profits, economic rents, and firm risk - differently. New product introductions remain a focus of management researchers in the search for additional understanding of the influences on firm performance (Page & Schirr, 2008).

New Product Introductions

New product introductions, and their influences on firm performance, have been the subject of significant study in the management literature (Bayus, Erickson, & Jacobson, 2003; Chaney, Devinney, & Winer, 1991; Eisenhardt & Tabrizi, 1995; Katila & Ahuja, 2002). The value of new product introductions to firm success has been consistently recognized in the literature (Blundell, Griffith, & Van Reenen, 1995; Chaney & Devinney, 1992; Zirger & Maidique, 1990), and new products can serve as a primary output of strategic decisions in response to changing environments (Eisenhardt & Tabrizi, 1995). Dougherty and Hardy explained that "successful new products and services are critical for many organizations, since product innovation is one important way that organizations can adapt to changes in markets, technology, and competition" (1996: 1120). New product introductions reflect the commercial value of a number of critical firm resource allocation decisions, including R&D investment, knowledge and learning, and scientific publications (Katila & Ahuja, 2002). Balachandra and Friar summarized the necessity of new product introductions by explaining that "bringing new products successfully to market is the lifeblood for most organizations" (1997: 276).

The introduction of new products or services is a critical outcome of innovative behavior (Balachandra & Friar, 1997; Chaney & Devinney, 1992; Dougherty & Hardy, 1996; Eisenhardt & Tabrizi, 1995). Chaney and Devinney explain simply that "product and service innovation is argued by many to be the driving force behind managerial and corporate success" (1992: 677). From their study of new product introductions in the electronics industry, Zirger and Maidique (1990) argue that new product introductions are critical components of the majority of manufacturing firms' growth and prosperity.

Aspects of New Product Introductions. Scholars have examined a variety of factors that would contribute to successful new products and new product development processes (Brown & Eisenhardt, 1995; Ernst, 2002; Page & Schirr, 2008). Three elements have received significant attention, including the number of new products introduced, the diversity of new products introduced, and the degree of conformity (or,

conversely, the deviation from industry norms) of the types of new products introduced (Cooper, 1985; Kleinschmidt & Cooper, 1991).

While a firm's new products may contain a variety of features and characteristics, for this study I am focused on three characteristics of a firm's yearly output of new products: number, diversity and deviation from industry norms. Each of these characteristics has been identified in the innovation and product development literature as critical for understanding the performance and impact of new product introductions (Herrmann, Gassmann, & Eisert, 2007; Katila & Ahuja, 2002; Kleinschmidt & Cooper, 1991). The number of new products provides insight into a firm's capacity for transitioning innovation into marketable products. Second, the diversity of new products may provide stakeholders with better awareness of the scope of a firm's innovative behavior and how the firm defines its presence across its competitive landscape. Finally, the conformity or deviation of the breadth of new products from industry norms may enable stakeholders to assess how firms attempt to position themselves versus their competitors and how these firms behave when faced with established industry behavioral patterns.

For many firms, innovation is revealed through the introduction of new products (Utterback & Abernathy, 1975). From Schumpeter (1934, 1942) to more recent analysis in management (Abernathy & Clark, 1985; Roberts, 1999), "innovative behavior is believed to be the engine of economic growth and development" (Chaney, Devinney, & Winer, 1991: 574). In order to best understand the influence of new product introductions, aggregating new product introductions annually can serve as a means of evaluating the characteristics of a firm's stream of new products.

CEO influence on new product development also has been examined in the popular business and automotive press. High profile auto industry veteran Bob Lutz has witnessed the product development process from a variety of positions at a number of major auto manufacturers - from Chrysler, Ford and General Motors to BMW. Recently, Lutz discussed the new product development process at General Motors surrounding a long-rumored, mid-engine Chevrolet Corvette, a design development that would position

the venerable American sports car against a new collection of competitors, including Ferrari, Lamborghini and Porsche and specialty sub-brands such as Mercedes AMG. In a recent article for *Road & Track*, Lutz revealed the 2003 internal discussions of the mid-engine Corvette that could be priced only $5000 above the existing Corvette [approximately $70,000 - $90,000]. Lutz (2015) explained GM CEO Rick Wagoner's reaction to the product proposal and the potential for a new, mid-engine Corvette:

> *"Imagine an American-built car with the proportions of a Lamborghini at that price point . . . that's pretty appealing. [GM CEO] Rick Wagoner's reaction was the same as mine: "Oh. no, no. We're not going mid-engine." . . . [Wagoner] thought a little more power next time would fill the bill." (p. 103)*

Wagoner's negative reaction to the mid-engine Corvette design cemented the rejection of the mid-engine design, and General Motors has yet to develop a mid-engine Corvette. New Corvette models continue to display incremental improvements in horsepower, suspension architecture and driver-focused technologies. This anecdote illustrates some of the influence of the CEO on the new product design process - despite the numerous designers, engineers, finance professionals and product planners involved with the development process.

NUMBER OF NEW PRODUCTS. First, the aggregate output of innovation activity - represented by the number of new products - is considered a strong indicator of a firm's innovative capabilities. In their investigation of how firms solve problems to create new products, Katila and Ahuja explain that a firm's ability to introduce new products is defined as the "number of new products a firm introduces" (2002: 1184). Using patent data and new product introduction announcements for industrial robotics companies over a 10-year period, Katila and Ahuja tested their hypotheses that assert both the depth (defined as the search of a firm's prior knowledge) and scope (defined as the degree of new knowledge explored) of a firm's search process will influence the number of new products introduced in a curvilinear fashion (both in an inverted U shape). The authors find that search depth does have a curvilinear relationship with new product

introductions, while search scope has a positive, linear relationship with new product introductions.

A variety of other studies also examine the number of new products when testing influences on firm performance (Sorescu & Spanjol, 2008; Srinivasan, Pauwels, Silva-Risso, & Hanssens, 2009). Sorescu and Spanjol (2008) count the number of new consumer products introduced by firms between 1985 and 2003 to test any variations in the influence of incremental versus breakthrough products on normal profits, economic rents and firm risk. Both breakthrough and incremental product introductions have positive effects on a firm's normal profits. Breakthrough products are found to have a positive effect on economic rents and firm risk, while incremental product introductions have no measurable effects on economic rents or firm risk. Srinivasan and colleagues (2009) examine new product introductions and marketing expenditures on financial performance in the automobile industry. Regarding new product introductions, their results confirm their expectations that both new-to-the-market and new-to-the-firm product innovations improve stock returns. However, Srinivasan and colleagues' (2009) results indicate that new-to-the-market product introductions generate stock return benefits that are seven times larger than those generated by new-to-the-firm product introductions.

The competitive dynamics literature also centers on the number of actions as a critical measure of firm competitive activity. Ferrier et al. (1999) hypothesized that the number of actions taken by a market leader would influence both the amount of erosion of that firm's market share leadership as well as the leader's status as the market leader. Actions included new product introductions, pricing decisions, marketing efforts and capacity adjustments, among others (Ferrier et al., 1999). Their study found that the greater number of actions taken by the market leader lessened the amount of erosion and reduced the chance of the leader being dethroned (Ferrier et al., 1999). Lee et al. (2000) examined the timing and order of strategic moves - operationalized through new product introductions and potential imitations - on stock market performance. In line with their expectations, the authors find that the faster and earlier that a firm introduces a new

product, the greater the positive stock market effects. Imitations, however, are found to be able to erode the new product first mover advantage. Lee and colleagues' work expands the scope of work on new product introductions to the timing and durability of performance advantages beyond the more traditional analysis of the number of introductions.

The number of new products introduced may indicate a willingness to invest in new product development, a highly skilled research and development program, or a more efficient product development process. The number of new products introduced may be a means of understanding the goal selection and goal commitment of firms led by CEOs with different regulatory focus orientations. With a promotion focused CEO, the strategic imperative is an eagerness to achieve goals by generating a lot of alternatives - all in search of successful hits (Higgins, 1997). CEOs with a promotion focus orientation may drive their firms to pursue success in a product market by generating a high volume of product innovations. A promotion focus orientation facilitates strategic flexibility (Liberman et al., 1999), which could be expected to enable firms to commit resources to a variety of new product development efforts.

When examining the influence of CEO personality characteristics on firm behaviors in the Finkelstein, Hambrick and Cannella's bounded rationality model (2009), where CEO psychological characteristics and observable experiences affect the CEO's information filtering and interpretation processes that lead to strategic choices, one could consider that a CEO's promotion focus would expand her field of vision as she contemplates new product alternatives. A broader field of vision may enable more opportunities to be identified and evaluated - reaffirming the pursuit of more successful hits. Motivated by a desire to ensure hits by eagerly pursuing a variety of alternatives (Higgins, 1998), a broader field of vision may serve as a mechanism to facilitate the pursuit of more new product introductions.

Additionally, a CEO with a promotion focus may be more willing to approve new product introductions. This predisposition to "yes" (Crowe & Higgins, 1997) could be expected to trigger the increased development of a greater number of new product ideas.

As a result of this broader field of vision, predisposition for approval and the ongoing search for hits, a firm led by a CEO with a promotion focus orientation could be expected to generate a high number of new products. It can therefore be hypothesized that:

Hypothesis 1: Firms led by a CEO with a promotion focus orientation will introduce a high number of new products.

A prevention focus emphasizes safety and the preservation of the status quo (Liberman et al., 1999). When pursuing a goal, the prevention focus orientation will likely motivate a CEO to narrow her potential options to avoid making a mistake (Liberman et al., 2001). This narrowing of perspective may center a firm's product development pipeline to a few potential new products.

In addition to a desire to avoid making mistakes, a CEO with a prevention focus orientation may heighten firms' vigilance against introducing lower quality products (Higgins, 1998). Firms are faced with limited resources, and stretching these constrained resources across a broad set of new product opportunities would be undesirable for firms led by a CEO with a prevention focus. The risk of developing a "weak link" in the new product collection or introducing a less than fully developed product would be in direct opposition to a prevention focused CEO's orientation towards vigilance, safety and avoiding losses (Crowe & Higgins, 1997; Higgins, 1997). As those with a prevention focus are most concerned with responsibility and what ought to be done, CEOs with a prevention focus would be loathe to violate the high expectations for new product introductions (i.e., Intel CEO's assertion that "only the paranoid survive"). This would suggest that a smaller, well-developed new product introduction portfolio could be expected.

As opposed to the broadened field of vision triggered by a CEO with a promotion focus, one could expect that a CEO with a prevention focus may employ a narrower field of vision (Finkelstein et al., 2009) when proceeding through the new product introduction decision-making process. A CEO with a prevention focus may also interpret each element in the new product development process more conservatively, in an attempt to

eliminate potential negative outcomes from less desirable alternatives. The bounded rationality and managerial cognition literatures have suggested "cognitive filtering mechanisms . . . may explain how attributes of CEOs dispose them toward specific strategic behaviors with implications for firm performance" (Nadkarni & Herrmann, 2010: 1050). The narrower field of vision and more critical and conservative interpretation would be expected to reduce the number of new products that gain the approval from a CEO with a prevention focus.

As seen in the organizational ecology literature and elsewhere in the management literature (Carroll & Teo, 1996; Hannan & Freeman, 1984; Henderson & Clark, 1990; Rosenbloom & Christensen, 1994), innovation can be disruptive for both the innovator and the competition. CEO prevention focus would be expected to motivate firms to avoid disrupting the status quo (Liberman et al., 1999). A broad array of new product introductions would certainly increase the risk of disruption and potentially threaten a firm's vigilantly preserved stability. As a result of being led by a CEO with a prevention focus, firms would be expected to limit the number of new product introductions to preserve stability, avoid potential errors and narrow the number of opportunities that need significant analysis and due diligence. It can therefore be hypothesized that:

Hypothesis 2: Firms led by a CEO with a prevention focus orientation will introduce fewer new products.

DIVERSITY. A number of researchers have examined the variety and diversity of new product introductions. The work has ranged from the development of typologies and frameworks for characterizing new products (Danneels, 2002; Nobeoka & Cusumano, 1997) to examining the role of new product diversity in a firm's product variety strategy (Ramdas, 2003) to the role of innovativeness - the nature of what a firm produces when developing new products - and existing firm product offerings (Danneels & Kleinschmidt, 2001; Kleinschmidt & Cooper, 1991). Danneels (2002) centers on the influence of a firm's competencies (across multiple dimensions) to characterize the diversity of a firm's new products. Danneels (2002) developed a typology encompassing

the nature of technology and customer-oriented competencies inherent in a new product to characterize it along an exploitation/exploration continuum. This typology/matrix helps researchers understand how existing or new competencies define the uniqueness and function of the new product.

Nobeoka and Cusumano (1997) use the auto industry as their context for examining the diversity of a firm's new product portfolio. In examining new product development projects in the auto industry over more than a decade, the authors develop a typology centered on the significance of the new product versus existing products and the time required to develop the product. The authors establish four categories to characterize a new product - ranging from a completely new design to a modest design modification. Nobeoka and Cusumano focus their attention on the two intermediate categories - rapid design transfer and sequential design transfer - which capture the speed by which previous design elements could be incorporated into new products. The authors find that rapid design transfer can facilitate significant competitive advantage beyond the traditional product development processes, particularly in industry sectors where this process is not yet evident.

Ramdas (2003) offers an integrated theoretical model addressing the creation and development of new product variety. Her model encompasses variety creation and implementation, and how the degree of new product variety is related to customer demand, product-line synergies, and, ultimately, long term profitability. Ramdas (2003) defines product variety or diversity across differences in form and product function, and emphasizes the elimination of design elements that do not drive differentiation to reduce unnecessary resource commitments. Product variety - particularly the management and development of diverse and varied new products - can forge competitive advantages leading to superior financial performance.

In their examination of the influence of new products on firm performance, Kleinschmidt and Cooper (1991) discuss the influence of innovativeness on performance - or how different the new product introductions are from the firm's existing products. The authors identify three levels of innovativeness - high, medium, and low - that are

defined by the degree of "new-to-the world products and innovative new product lines to the company" (Kleinschmidt & Cooper, 1991: 243).

In their examination of product innovativeness, Danneels and Kleinschmidt (2001) offer a multi-dimensional construct of innovativeness and new products' relationships with a firm's existing offerings. First, the authors posit the newness of a product introduction with regards to familiarity of a firm with the domains in which it offers products. A new product may position a firm into an unfamiliar environment, and the new environment may pose challenges for firms to support the new product. The authors extend this concept to include familiarity with the technological and market environments that are deemed equally important for the success of a new product. Additionally, Danneels and Kleinschmidt (2001) posit that new product introductions may or may not fit with the firm's existing internally available resources. How well the new product fits within the firm's existing resource base may help define how much the new product differs from the firm's existing product lineup. The new product may challenge the firm's ability to successfully commercialize the product if the fit with existing resources and capabilities is poor.

The diversity of the new products introduced may tap into a leader's strategic focus or tolerance for the additional risk of competing in a variety of product categories. The eagerness versus vigilance characteristics of a CEO's regulatory focus orientation may be represented by the diversity of the firm's new product introductions. As firms consider developing new products, a CEO with a promotion focus orientation could be expected to motivate her firm to search more broadly for potential solutions (Brockner et al., 2004). The eagerness to find one or more hits - all in pursuit of achieving success - would drive a firm led by a CEO with a promotion focus orientation to leave no stone unturned in its search. While a number of factors may influence the success of such a search - financial resources, design talent, etc. - the underlying motivation to search more broadly would be a common feature of firms led by a CEO with a promotion focus.

A potential byproduct of the broader search could be a more diverse array of new products (Rietzschel, 2011). Rietzschel (2011) found that promotion focused groups

generated more innovative ideas than their prevention focused counterparts. Firms may identify previously unidentified opportunities of underserved markets that could propel the firm to developing new products to serve the new opportunities. A CEO with a promotion focus orientation could motivate a firm to bring these new ideas to market in search of additional hits (Higgins, 1998).

As expected with the number of new product introductions, the diversity of a firm's new products could be expanded with a CEO's promotion focus orientation. Firms could be expected to seek more opportunities for success and be willing to take a riskier approach of attempting to find hits in a more diverse array of product categories. Given the broader search process and more creative solution generation, a firm led by a CEO with a promotion focus orientation could be expected to create a more diverse portfolio of new product innovations. It can be hypothesized that:

Hypothesis 3: A firm led by a CEO with a promotion focus orientation will introduce new products in a large number of product categories.

Firms led by a CEO with a prevention focus orientation will remain ever-vigilant to avoid mistakes and maintain the status quo (Crowe & Higgins, 1997). This would lead one to expect that these types of firms would refrain from introducing new products in a broad variety of product categories. In order to exert the necessary vigilance in ensuring against losses, CEOs with a prevention focus orientation will narrow the scope of new products considered and offered (Liberman et al., 2001). We could expect that firms led by a CEO with a prevention focus could have a narrower array of product categories offered than firms led by a CEO with a promotion focus orientation. As a result, new product introductions could be expected to remain in those narrowly focused categories.

Additionally, firms led by a CEO with a prevention focus orientation would be more likely to remain committed to their existing product categories (Liberman et al., 1999) and fear mistakes that could come from introducing products that would take the firm outside of these existing boundaries. This commitment to a firm's existing product categories would be strengthened by the firm's narrower product category presence.

While a CEO with a prevention focus orientation may attempt to mine her firm's existing product categories for additional product successes, we could anticipate that these CEOs would find it difficult to risk failure by broadening the product categories that their firms serve. As a result of this reluctance to risk losses in new areas and the narrowed scope of a firm led by a CEO with a prevention focus orientation, these firms would likely be reluctant to introduce new products in a broad array of product categories. It can be hypothesized that:

Hypothesis 4: A firm led by a CEO with a prevention focus orientation will introduce new products in fewer product categories.

CONFORMITY TO INDUSTRY NORMS. A number of scholars across the strategy literature examine innovation and new product introductions as a means of assessing firms' conformity or nonconformity to industry norms (Abernathy & Utterback, 1978; Christensen & Rosenbloom, 1995; Tushman & Anderson, 1986), however these approaches typical focus on the specific characteristics of the focal innovation, rather than pursuing greater understanding of the underlying firm behaviors driving the attempts at differentiation. Competitive dynamics researchers have addressed differentiation and conformity through the comparison of firm actions with those of the competition, and classifying the level of dissimilarity (Ferrier et al., 1999). Dissimilarity is characterized as the level of differentiation "relative to rivals and captures the extent to which the actions of a particular firm are different from those of other firms" (Ferrier et al., 1999: 376). The authors explain that actions (which include new product introductions) reflect a firm's "aggressive attempt to break away from the norms of everyday competition" (Ferrier et al., 1999: 376). This perspective on dissimilarity builds on the Austrian economics concept of actions serving as the source of competitive differentiation and Penrose's conceptualization of strategic differentiation (Ferrier et al., 1999). Ferrier and colleagues posit that dissimilar actions and deviation from industry strategic norms are critical for industry leaders to preserve their leadership positions.

In their examination of the competitive dynamics of small and large airlines, Chen and Hambrick (1995) show that firms benefit from competitive conformity, rather than pursuing strategies that deviate from the industry norm. Small firms that deviate from strategic norms - which may be considered the optimal and legitimate competitive profile for firms of a certain size - suffer from threats to legitimacy by deviating; while large firms may suffer threats to their perceptions among stakeholders when deviating significantly from established norms of strategic action (Chen & Hambrick, 1995). For smaller airlines, Chen and Hambrick (1995) indicate that the specific strategic behavior that forms the basis for the competitive norm centers on action execution speed - and their study demonstrates that smaller firms execute strategic actions more quickly than larger firms. For larger airlines, the benchmark strategic behavior centers on these firms' propensity for both action and response. The study finds that larger firms announce strategic moves more quickly than smaller firms and are more likely to respond to an action by a competitor than smaller firms. Deviation from norms may garner attention, but can be strategically damaging to both small and large firms.

Miller and Chen (1996) complement the work of Chen and Hambrick by examining factors that may influence conformity and nonconformity from a sociological perspective. The authors hypothesize that nonconforming behavior may be driven by firms' interaction with other industry players - specifically the diversity of the focal firm's competitors and customers. Miller and Chen (1996) are careful to highlight that other, more conventional factors such as firm size and market performance may also contribute to the level of nonconforming strategic behavior. Using the airline industry and a longitudinal analysis of firm strategic moves, the authors do find that customer diversity did contribute to nonconformity and competitor diversity contributed to tactical nonconformity, but not overall nonconformity (Miller & Chen, 1996). Importantly, Miller and Chen assert that there are not a priori industry strategic norms, but de facto norms may emerge - specifically, "patterns of competitive behavior that are typical of a group of interacting competitors of similar market scope" (1996: 1210). Also,

conformity to industry norms should not be considered a binary condition, but rather occurs along a continuum on which firms may differ significantly.

Beyond the competitive dynamics literature, other strategy scholars have also addressed conformity and nonconformity of firm strategic behavior. Carpenter (2000) examines the effect of CEO compensation on firm behavior varying from accepted norms. He defines strategic deviation as "changes in the deviation of a firm's resource commitments from industry norms of competition" (Carpenter, 2000: 1182). To illustrate, Carpenter identifies Chrysler's reduction in internationalization in the early to mid-1990's (through the reduction of foreign sales and production) as deviation or nonconformity in the face of other firms in the U.S. auto industry significantly increasing international operations. Carpenter calculated deviation as firm behaviors differing from industry averages for strategic actions such as R&D, advertising, SG&A intensity, and inventory levels, among others. The differences between the focal firm and industry averages reflected "how much, on average, a firm tended to gravitate toward or away from industry strategic norms" (Carpenter, 2000: 1188). Carpenter did find that increases in CEO compensation had a positive effect on strategic change and strategic deviation.

I expect CEO regulatory focus to affect a firm's deviation from industry norms in breadth of new product introductions. Differences in CEO-level regulatory focus may drive firms to behave differently in regards to the level of deviation from industry norms. A promotion-focused CEO may be more open to change (Liberman et al., 1999), and consider industry norms as too constricting as she searches for successful outcomes (Crowe & Higgins, 1997; Förster, Higgins, & Idson, 1998). Promotion-focused CEOs may be more willing to look outside of existing industry norms for solutions, and be willing to discard existing industry conventions in exchange for new alternatives (Liberman et al., 1999).

A promotion focus may propel an entity towards more creative solutions in its search for hits that produce gains (Friedman & Förster, 2001; Higgins, 1998). As a firm broadens its search for success (Brockner et al., 2004; Pham & Chang, 2010) and generates more creative solutions than one led by a CEO with a prevention focus, the

firm may introduce a slate of products that do not conform to the typical or accepted offerings of the industry. The broader search and more creative new product introductions could be expected to incorporate more new knowledge than the new products developed by the more conservative and loss averse firms led by a CEO with a prevention focus orientation. More new knowledge could generate an array of innovations (Dewar & Dutton, 1986) that may not conform to typical industry behaviors regarding the breadth of new product introductions.

In addition to the promotion focus producing more creative solutions, it appears that a promotion-focused CEO may be prone to making riskier decisions (Florack & Hartmann, 2007). A promotion-focused CEO may not value the need to conform to industry norms or be considered the leader of an "average" firm in its industry. A firm led by a CEO with a promotion focus orientation may more broadly define what is an "acceptable" risk when introducing new products - further discounting any influence of what might be considered the norm for its industry. An increased acceptance of potential risk may facilitate the introduction of a breadth of products that vary more significantly from the industry norms. As a result of an openness to change, greater risk taking and more creative solution generation, it could be expected that firms with CEOs with a promotion focus orientation would generate a collection of new product introductions that deviate more from industry norms. It can by hypothesized that:

Hypotheses 5: A firm led by a CEO with a promotion focus will introduce new products in departure from industry norms.

Unlike a firm led by a promotion-focused CEO, a firm led by a CEO with a prevention focus will be driven to maintain stability and the status quo (Crowe & Higgins, 1997; Higgins, 1998) and be more sensitive to social pressures (Higgins, 2000). A CEO with a prevention focus would be prone to behave in accordance with what was accepted and what the status quo deems as what ought to be done (Higgins, 1997). While a promotion-focus oriented CEO may be willing to make riskier and more creative decisions, a firm led by a CEO with a prevention focus would be expected to minimize

the chance for a loss by being more conservative (Higgins, 1998). A CEO leading a firm with a prevention focus orientation would adhere more closely to industry norms and avoid any threats to a sense of safety (Higgins, 1997). This predilection for safety and the status quo could be manifest in introducing new products in accordance with industry norms.

CEOs with a prevention focus would be more aware of potential punishments and the negative repercussions of deviating from the status quo (Liberman et al., 1999). As a prevention focus motivates an individual to limit her options when making decisions and generate less creative solutions (Friedman & Förster, 2001), it would also motivate individuals to remain focused on existing products (Liberman et al., 1999). By remaining committed to existing products and product categories, a firm led by a CEO with a prevention focus would continue to conform to accepted industry norms regarding new product introductions. As a result of a predilection for maintaining the status quo and a commitment to behaving in a manner that is expected, firms led by a CEO with a prevention focus could be expected to conform more closely with accepted industry strategies regarding new product introductions. It can be hypothesized that:

Hypothesis 6: A firm led by a CEO with a prevention focus will introduce new products that conform with industry norms.

CEO Regulatory Focus and Product Recall Behavior

Management scholars have shown significant interest in the influence of firm errors and the reliability of product performance on firm outcomes (Haunschild & Rhee, 2004; Reilly & Hoffer, 1983; Rhee & Haunschild, 2006). Much of this work has focused on the impact of the errors or poor product performance on firm stock prices, market share or sales (Barber & Darrough, 1996; Cho & Pucik, 2005; Reilly & Hoffer, 1983). Limited attention has been paid to the underlying drivers of firm behavior that may lead to unreliable product performance - as reflected in product recalls. Haunschild and Rhee (2004) use product recalls as a basis for exploring firm learning behavior, but do not

examine underlying influences on behavior - rather focusing on prior recalls and production experience as potential influences on future recall behavior.

Regulatory focus theory can provide some insight into potential behavioral mechanisms affecting product performance reliability. Prevention focus is centered on vigilance behaviors - featuring a predilection for safety, responsibility and the avoidance of negative outcomes (Higgins, 1998). A system of behavior driven by a prevention focus is attuned to preserving the status quo and the commitment to pursue goals based on what ought to be done (Crowe & Higgins, 1997). In the context of product performance, one can assert that a CEO with a prevention focus could be expected to avoid pursuing opportunities that could lead to mistakes or recalls. Once a new product opportunity was pursued, a CEO's prevention focus would prioritize behavior leading to accuracy (Förster et al., 2003) and correct outcomes. A should be expected to refine its procedures and manufacturing practices to produce its vehicles most effectively and in accordance with manufacturing standards (Wallace et al., 2010). CEO's with a prevention focus will highlight safety and mistake avoidance behavior (Förster, Higgins, & Bianco, 2003; Lanaj, Chang, & Johnson, 2012) in regards to product production. Product development processes would be centered on accuracy and producing vehicles in accordance with proscribed safety standards. One could expect firm culture to be centered on avoiding mistakes and generating safe, successful outcomes.

A CEO with a prevention focus can also be expected to motivate her firm to generate fewer, less risky alternatives than a CEO with a promotion focus orientation when considering new product opportunities (Friedman & Förster, 2001; Molden & Higgins, 2004). When considering the decision-making process regarding the selection of potential alternatives, a CEO with a prevention focus orientation would be expected to select the lower risk option (Levine et al., 2000). Lower risk alternatives - combined with an underlying behavioral predisposition for safety and error avoidance - could be expected to generate new products that were more reliable and less error prone. Fewer, well thought out alternatives could be expected to generate fewer poor performing products that might necessitate recalls. Once a product was put into production, a CEO

with a prevention focus orientation would assure a greater focus on safety and safe work outcomes (Lanaj, Chang, & Johnson, 2012), which could be expected to foment a work environment centered on error avoidance. For example, under CEO Philip Caldwell, and successor CEO Donald Peterson, Ford Motor Company instituted the broadly publicized slogan "Quality is Job 1" to inform customers and, almost equally importantly, Ford employees that Ford produced quality vehicles that could compete with recent Japanese imports, as well as to re-align Ford's internal culture toward one of higher quality, market focused vehicles (Banham, 2002). The strategic vigilance espoused by the CEO could be expected to permeate the entire product development and production process (Kark & Van Dijk, 2007), thereby potentially reducing product quality failures and any subsequent product recalls. It can be hypothesized that:

Hypothesis 7: A firm led by a CEO with a prevention focus orientation will issue fewer product recalls.

The prior discussion addresses how a CEO-level promotion or prevention focus may influence specific behaviors, namely new product introductions and product recalls. The next section examines 1.) the effects of CEO promotion focus on prominence; 2.) the potential mediating effects of new product introductions on the relationship between CEO promotion focus and firm prominence; 3.) the effects of CEO prevention focus on reputation for quality; and 4.) the potential mediating effects of product recall behavior on the relationship between CEO prevention focus and a firm's reputation for quality (Rindova et al., 2005). I provide some insights into the various dimensions of firm reputation as I develop the direct and mediation hypotheses.

FIRM REPUTATION

Reputation is defined as "stakeholders' perceptions about an organization's ability to create value relative to competitors" (Rindova et al., 2005: 1033). The benefits of a positive reputation on firm performance have been established through a variety of studies in the management literature (Fombrun & Shanley, 1990; Podolny, 1993; Roberts

& Dowling, 2002). Additionally, firm reputation has been established as a valuable intangible asset (Barney, 1991; Hall, 1992, 1993; Rindova & Martins, 2012), which provides benefits regarding reduced stakeholder uncertainty (Fombrun & Shanley, 1990; Rao, Greve, & Davis, 2001) in addition to positive financial benefits. The effects of reputation have been studied extensively, but there is less consensus on the antecedents and formative elements of firm reputation (Rindova et al., 2005). The importance of reputation on performance and non-performance outcomes mandates further study to expand our knowledge of the particular foundations of firm behavior that contribute to the formation of firm reputation in the eyes of stakeholders (Rindova et al., 2007).

In his examination of a broad array of intangible assets, Hall (1992) surveyed approximately 100 CEOs who identified overall company reputation as the most important contributor to the overall success of their business from a selection of 13 intangible assets. Hall (1992) asserts that an overall firm reputation is fragile and touches all areas of an organization, and merits constant attention in interaction with all stakeholders. Fombrun (Fombrun & Shanley, 1990; Fombrun, 1996) explains that firms compete for reputation assets and target broad constituencies of stakeholders to facilitate reputation development.

As firm reputation emerged as a prominent construct in the management literature, scholars have debated the dimensionality of the construct (Chun, 2005; Rindova et al., 2005; Rindova & Martins, 2012; Schwaiger, 2004). In their seminal paper examining the development of firm reputation, Fombrun and Shanley (1990) use a single construct for firm reputation, supported by a factor analysis of the *Fortune* Most Admired Companies survey data. However, in the discussion of their results, the authors raise the question of whether firm reputation is a multidimensional construct, and suggest that different audiences (i.e., customers, employees, etc.) may hold different perceptions of firm reputation.

Recent work has begun to explore the multi-dimensionality of reputation. Scholars have proposed various models to incorporate multiple dimensions of reputation in a strategy context. Rindova et al. (2005) is the first paper in this stream. Rindova and

colleagues (2005) present bi-dimensional model of firm reputation built upon two streams of reputation research, namely: 1.) the economics perspective of a firm having a reputation associated with a particular organizational attribute and 2.) the institutional perspective of a reputation serving as an overall impression of the firm among actors in an organizational field. Rindova and her colleagues (2005) present an integrated model that presents firm reputation as being comprised of both an overall impression, deemed prominence, and an attribute-based dimension, defined as perceived quality. Using U.S. business schools as the context, their study identifies the different antecedents of the reputation dimensions and explores the influence of the two dimensions on variations in MBA graduate salaries. In the formation of the overall prominence component, the influence of the media and other high status actors is found to be critical for the formation of the overall firm reputation (Rindova et al., 2005). The quality of the firm's inputs (i.e., Intel Inside for PC manufacturers) and the quality of the firm's productive assets (i.e., leading research scientists at a biotechnology firm) are found to be critical to the formation of a firm's reputation for quality. This two-dimensional model of firm reputation, consisting of both prominence and perception of quality aspects, serves as the foundational constructs for the focal dependent variables in this study.

Rindova and Martins (2012) characterized the development of firm reputation as a valuable firm asset as being comprised of four dimensions: specificity, accumulation, breadth of appeal and codification. In examining the accumulation of reputational assets through the perceptions of a variety of stakeholders and the firm's breadth of appeal, the authors highlight two components: 1.) prominence/visibility that encompasses the collective attention paid to a firm and 2.) favorability that holds the collective evaluations across a broad range of stakeholders. Prominence and visibility are often associated with the amount of attention the focal firm is granted in the media (Deephouse, 2000; Fombrun & Shanley, 1990). Favorability is often associate with the positive or negative tone of the coverage of a firm (Deephouse, 2000; Greenwood, Li, Prakash, & Deephouse, 2005; Rindova et al., 2007).

Finally, Rindova, Petkova and Kotha (2007) employed a multiple case study to inductively develop a model of how new firms in the emerging e-commerce market developed and accumulated reputation through their market actions. The authors developed a multi-dimensional model of firm reputation, consisting of visibility, strategic character, favorability and esteem. Each of these reputation components was affected by different types of firm actions, and resulted in different patterns of media coverage. Specifically, a new firm was found to increase the perceptions of its favorability by "providing observers with indications of its ability to create value, and, in particular, by taking innovative actions" (Rindova et al., 2007: 56). Innovative actions vary between firms, and may be difficult to undertake, especially for the newer firms that were the subjects of the study. Accordingly, favorability was found to be more difficult to accumulate than visibility, which was accumulated by taking a high level of market actions, and may be considered more valuable than visibility or salience.

FIRM PROMINENCE. The literature addressing the prominence element of overall firm reputation often looks to the media as an important medium for disseminating information about a focal firm. Fombrun and Shanley (1990) assert that the media are "active agents" in shaping information about a firm and shaping their audiences' assessment of firm activities. The authors posit that frequent, positive messages delivered by the media about a focal firm may "therefore develop better reputations than other firms because they occupy more central positions in a social network" (1990: 240). Interestingly, Fombrun and Shanley (1990) found the opposite effect in their empirical tests of their hypotheses; in fact, the higher the firm's visibility (measured by unit sales) the more negative the firm's reputation. The authors (Fombrun & Shanley, 1990) assert that media exposure may be centered on negative stories; the public may react negatively to all media coverage, whether negative or positive; or only those predisposed to making negative evaluations of a firm use media accounts for information about a focal firm.

Additionally, Wartick (1992) examined the influence of single episodes of intense media exposure on overall firm reputation. The author offered hypotheses regarding the

amount, tone and recency of media exposure on the magnitude, direction and total movement of changes in corporate reputation. Increases in the amount of media exposure are expected to increase absolute changes in reputation; negatively influence the direction of reputation; and be associated with larger, negative changes in reputation. The negative tone of media exposure is hypothesized to generate larger absolute changes in reputation; generate negative changes in reputation; and is associated with larger, negative changes in reputation. Finally, the more recent the media exposure on a focal firm is hypothesized to produce larger absolute change in reputation; the change in reputation in the direction of the tone of the exposure; and is associated with larger, negative or positive change in reputation.

Wartick (1992) used the *Fortune* Most Admired survey as the measure of firm reputation for 29 subject companies, and used an aggregation of news reports relating to a focal firm within a specific period computed by the Conference on Issues and the Media (CIM). The author (1992) found that more media exposure is directly related to larger, positive changes in reputation for good and average firms. The tone of media exposure is only found to be significant for poor reputation firms, and negative exposure decreased firm reputation. Finally, more recent media exposure for companies with a good starting reputation is found to be associated with both improvements and larger improvements in firm reputation.

Pfarrer, Pollock, and Rindova (2010) examined the effect of firm celebrity - which incorporates prominence and the tenor of the attention - and firm reputation on a firm's likelihood to announce positive and negative material earnings surprises. The authors operationalized reputation by combining *Fortune* Most Admired Companies rankings with the Wall Street Journal/Harris Interactive "Corporate Reputation" list. Celebrity is measured through the combination of the amount of public attention - defined as articles published in *BusinessWeek* - and the tenor of media coverage. As theorized, the authors found that high-reputation firms less likely and celebrity firms are more likely to announce positive material earnings surprises. Also, these same types of firms - high reputation and high celebrity - generate greater rewards for positive surprises

and smaller negative consequences for negative surprises than firms without either of these characteristics. Finally, celebrity firms generate higher positive returns for positive surprises than positive returns to high reputation firms for positive surprises. These multiple instantiations of external stakeholders' perceptions of firms - either through firm reputation, celebrity or prominence - provide further empirical evidence for the validity and market effects of these intangible assets.

CEO Promotion Focus, Firm Prominence and New Product Introductions

Firm reputation is a multi-dimensional construct, with Rindova and colleagues (2005) demonstrating that reputation is comprised of two dimensions - perceived quality and prominence. For prominence, the authors assert that a firm's reputation depends on "support and endorsement by influential third parties, such as institutional intermediaries and high-status actors" (Rindova et al., 2005: 1044). One of the principal intermediaries that can influence a firm's reputation is the media. The media interprets the available information regarding a firm and its activities to determine its worthiness as a subject and to determine the amount of coverage the firm merits (Rindova, Petkova, & Kotha, 2007). Given its agenda-setting power, the media has a significant influence on other stakeholders' perceptions of prominence of a focal firm.

A promotion-focused CEO will be more likely to be attuned to positive outcomes (Higgins, 1998), and likely will communicate these positive outcomes to the media. Given a CEO with a promotion focus is motivated to pursue more opportunities in search of successful outcomes, this type of CEO will likely communicate this pursuit of opportunities and successes to the media to enhance her firm's opportunity for positive reinforcement and greater positive affect through media coverage (Kark & Van Dijk, 2007). A promotion-focused CEO will be motivated to frame her firm's behavior in a more positive light - reflecting her aspirations for accomplishment (Higgins, Shah & Friedman, 1997) - which may be reflected in the media coverage of the firm's actions.

A promotion-focused CEO may attract media attention as a result of greater tolerance for risk, with this risk-tolerant - and potentially risk seeking - behavior (Florack

& Hartman, 2007) enhancing firm prominence in the media. The more risk-tolerant behavior and greater frequency of decisions (Förster, Higgins & Bianco, 2003) can attract more media attention, as a promotion-focused CEO may be called on to communicate more frequently with the media to address her firm's more frequent strategic actions (Rindova, Petkova & Kotha, 2007). The ever-expanding media appetite for content could be expected to be fed by a promotion-focused CEO and her ongoing, riskier actions (Levine, Higgins & Choi, 2000). It can be hypothesized that:

Hypothesis 8a: A firm led by a promotion-focused CEO will garner greater prominence through the attention from the media.

A firm with greater new product introduction behavior - reflected in greater number, more diverse and potentially nonconforming new product introduction portfolio - could be expected to receive greater media coverage of its actions. Firms with greater number of new products will be more frequent issuers of press releases and likely be more active in seeking media coverage of their new products (Robertson, Eliashberg, & Rymon, 1995). In their examination of new firms' actions and media coverage of those actions, Rindova, Petkova and Kotha observe that "taking high levels of market actions appears to increase the salience of a firm and its actions, resulting in higher levels of visibility" (2007: 56). Stakeholders, including the general media, could gain increased familiarity with a firm through the greater amount of innovative behavior and determine that these types of firms are worthy of significant attention. This significant attention should increase the focal firm's prominence among its stakeholders, thereby increasing its reputation. It can therefore be hypothesized that:

Hypothesis 8b: Greater new product introduction behavior mediates the positive relationship between a firm led by a promotion-focused CEO and greater prominence through media attention.

REPUTATION FOR QUALITY. In addition to stakeholders' assessment of a focal firm's overall prominence, scholars have identified a component of firm reputation as the perception of a specific attribute of a firm - a firm being known for something (Fischer & Reuber, 2007; Lange, Lee, & Dai, 2011; Rindova et al., 2005). In their review of the reputation literature, Lange and colleagues (2011) distinguish between overall prominence (being known) and prominence for a specific firm attribute (being known for something) that is of particular interest or relevance to stakeholders. Specific attributes such as aggressive pricing policies, quality products, environmental sensibility, and labor relations, among others, could be evaluated by specific stakeholder groups. A firm could have a number of stakeholder groups with each group holding the perceptions of specific attributes, and the various attribute reputations could differ significantly without affecting the perceptions of various other stakeholder groups. Mahon comments that "reputation is an asset in relation to (a) a specific context or process, (b) a specific issue, (c) specific stakeholders, and (d) expectations of organizational behavior based on past actions and situations" (2002: 439).

Shapiro (1983) examines the influence of a firm's reputation for producing quality products, specifically when consumers are unable to observe the attributes of a product prior to making a purchase decision. Rather than prior predatory actions influencing competitors and stakeholders, as seen in Milgrom and Roberts (1982), Shapiro asserts that "consumers may plausibly use the quality of products produced by the firm in the *past* as an indicator of present or future quality" (1983: 659, emphasis by the original author). Shapiro's (1983) model demonstrated that high quality items sell for a premium above cost, and the premium is compensation to the seller for the expenditure of resources needed to build its reputation. Consistent with Milgrom and Roberts, Shapiro posits that past actions are valuable signals to a particular subset of stakeholders of future behavior and can be used to establish a perception of a particular trait of the focal firm. Additionally, as seen in Fombrun and Shanley's (1990) work on reputation in the strategy literature, Shapiro (1983) explained that a firm's reputation (in this case, a reputation for

quality products) is dynamic and must be developed over time - only accruing to firms that invest in the development of this asset (Dierickx & Cool, 1989).

The auto industry has been the subject of a number of papers examining aspects of firm reputation, including a reputation for quality products or reputation for product innovation (Henard & Dacin, 2010; Nichols & Fournier, 1999). Henard and Dacin (2010) used the auto industry as the context to test a measure they developed, reputation for product innovation (RPI). The authors assert that consumer involvement (defined as personal relevance) is a mediating mechanism between a firm's RPI and a number of consumer behaviors, including excitement toward the firm, overall firm image, loyalty to the firm, tolerance for occasional failure, and propensity to pay price premiums. A firm's reputation for product innovation was found to positively influence consumers' excitement to the firm; consumers' perceptions of the overall image of the focal firm; consumers' loyalty to the focal firm; and consumers' tolerance for occasional product failure.

Additionally, Nichols and Fournier (1999) examined the influence of a firm's reputation for quality products on future product pricing. The authors posit that firms that experience the greatest increase in reputation for product quality should experience the greatest increase in product pricing. The authors used *Consumer Reports* product ratings for approximately 120 car models from 1985-1990 as a measure of product quality and used car pricing from Edmund's Publications to measure changes in product pricing. Nichols and Fournier (1999) find that the strongest reputational effects occur where the largest quality changes were made. However, American cars of the era suffered from a negative influence of prior poor quality when compared to similar Japanese models, and experienced lower prices than the Japanese models. Nichols and Fournier (1999) assert that the Big Three U.S. auto manufacturers were still suffering negative effects from significantly poor product quality reputations in the early 1980's that affected pricing for the following decade. This study demonstrates the lasting and meaningful effects of a firm's reputation for quality products. Despite the well-publicized improvements in product quality of the Big Three during the 1990's, stakeholders'

perceptions of poor product quality generated by previous products remained and continued to negatively affect pricing (Nichols & Fournier, 1999). Nichols and Fournier (1999) conclude that there is no specific time period for auto manufacturers to completely replace the accumulation of a reputation for poor product quality; rather it is an ongoing, incremental process.

A CEO with a prevention focus will likely be motivated to prime her organization to generate quality products through both her words and actions (Kark & Van Dijk, 2007). A prevention-focused CEO is more risk averse (Florack & Hartman, 2007) and will likely be less tolerant of potential quality problems. A firm led by a prevention-focused CEO could be expected to publicize a culture of quality and error prevention (i.e., Ford's "Quality is Job 1" marketing campaign) and potentially enhance stakeholders' perceptions of a firm's reputation for quality.

A prevention-focused CEO is typically focused on the dependability and error-free nature of their company's products (Werth & Förster, 2007). By continually spreading her message related to product quality (Kark & Van Dijk, 2007), a prevention-focused CEO can enhance her firm's reputation for quality in the eyes of its stakeholders. Wallace and colleagues (2010) identified prevention focus as a driver for organizations to focus towards operational improvements rather than greater innovation, and a prevention focused CEO can reinforce these quality-focused attitudes through her monitoring-oriented behavior (Kark and van Dijk, 2007). This monitoring behavior could be central to creating a firm culture centered on avoiding mistakes that could be perceived as a greater reputation for quality by the firm's stakeholders. It can be hypothesized that:

H9a: A firm led by a prevention-focused CEO will garner more positive perceptions of its reputation for quality.

Product recall behavior could be expected to have an influence on stakeholders' perceptions of a firm's reputation for quality (Simpson, Siguaw, & Enz, 2006). Each of the firm's recalls could be an important signal (Heil & Robertson, 1991) to competitors, customers and other stakeholders. How others interpret the signals generated by recall

announcements can contribute to the construction of a firm's reputation (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006). As stakeholders evaluate a firm's product attributes, providing more reliable products that generate fewer recalls could resonate as critical inputs towards an enhanced perception of favorability (Greenwood et al., 2005; Rindova & Martins, 2012). Mistake-free products could be expected to be reflected in stakeholders' more positive perception of a firm's reputation for quality. Fewer recalls over the course of a focal firm's year may produce benefits to its reputation for product quality.

Recalls may signal that a firm's products have a greater propensity to fail, or to fall short of delivering the intended level of satisfaction to the customer base (Cooper, 1994; Simpson et al., 2006). A greater number of recalls may indicate that a firm lacks comprehensive quality control and could reduce the attractiveness of future product offerings (Nichols & Fournier, 1999). Disappointed customers saddled with unsatisfying products or numerous product recalls will likely hold a more negative perception of a firm's reputation for quality. As a result, it would appear likely that the larger the number product recalls, the greater the chance that the firm's reputation for quality could be negatively impacted. Conversely, the fewer product recalls may enable stakeholders to generate a more positive perception of a firm's reputation for quality. It can be hypothesized that:

Hypothesis 9b: Fewer product recalls issued by a firm mediates the positive relationship between a firm led by a prevention-focused CEO and more positive perceptions of its reputation for quality.

Chapter 4 - Methodology

Research Setting

The CEO of an automotive manufacturer leads a complex business comprised of a large number of interconnected functions. One of a firm's critical success factors is the product development process, and the CEO may be only one of many influences on the product introduction process. In his recent memoir covering his experiences at General Motors in the early 2000s, Bob Lutz explained that "a car company ... is one enormous, hugely complicated organism that has many moving parts, all closely interrelated and interdependent. Where it suddenly turns complex, and where the winners are separated from the losers, is in the long-cycle product development process" (2011: 203). Lutz compared the auto industry with multinational conglomerates such as General Electric, and concluded that "running this conglomerate [like GE] in detail is clearly beyond the capability of any one man" (2011: 203). However, Lutz argued that a 'highly skilled autocrat", such as Volkswagen Chairman Dr. Ferdinand Piech could run an auto manufacturer, particularly when demonstrating "self confidence bordering on and perhaps crossing into arrogance" and "strong direction and [an] insistence on excellence" (2011: 204-05). Toyota CEO Watanabe expressed similar sentiments regarding the interconnectedness and complexity of the auto industry by explaining that "our [process] is complicated by many factors that are peculiar to the automobile industry: long product life cycles; large and complex supplier networks; and increasingly, state-of-the-art technologies vis-a-vis safety, the environment, and traveling comfort" (Stewart & Raman, 2007: 80).

In their seminal study of the product development processes of global auto manufacturers, Clark and Fujimoto characterize the new product development process as:

> *"A project to develop a new car is complex and long lived; it may involve hundreds, even thousands, of people over many months. Planning and design are complicated by changing markets, long lead times, and a multiplicity of choices." (1991: 9)*

Clark and Fujimoto studied the new product development processes of U.S., Japanese and European manufacturers and provided a multi-faceted perspective on the influences on product development: 1.) market input from competitors and customer preferences; 2.) internal strategic planning inputs shaping the firm's complete product range; and 3.) technological inputs arising from both internal and external engineering developments. Scholars and industry insiders provide examples of these various influences below.

In his study of the influences on product development in the auto industry, Dauletova (2008) reaffirms the influence of the customer on product development. "Customer involvement is an important part of automobile development. The added value of customers in the automobile industry is customers' ideas and complaints are analyzed by marketers and sent to engineers for further improvement. The customers help make the products better ..." (Dauletova, 2008: 2). In a PriceWaterhouseCoopers 2013 survey of automotive industry executives and analysts, Dr. Stefan Bratzel from the Center of Automotive Management shared that in his industry research "we actually see customers experiences as intimately linked to all product innovation ... the bigger the benefit to the customer, the more relevant and important the innovation is" (PriceWaterhouseCoopers, 2013: 18). Additionally, Naumann explained that competitors play an increasingly important influence on a focal firm's new product development, "and so everybody keeps a sharp eye on their competitors and it is quite common for different manufacturers to feature astonishingly similar design elements" (2009: 3).

In addition to the consumer and competitor influences, the firm's broader product development planning processes strongly contribute to new product introductions. Lutz (2011) described the product planning and brand management processes within General Motors that often overrode the desires of the more creative product designers. Toyota CEO Watanabe explained the various influences within his firm on the product development process: "we have hours of debate and discussion, and just as my colleagues air their opinions, I make my own views known" (Stewart & Raman, 2007: 79). These collective, firm-wide influences on new product development can potentially supplement or supersede the influence of a CEO on the process.

Finally, both internal and external technological developments contribute strongly to the new product development process. As Dr. Bratzel of the Center for Automotive Management explains: "the more the OEMs strive for ... innovation, the more we see new players from other industries coming in and beginning to make an impact. These companies bring a different, new perspective" (PriceWaterhouseCoopers, 2013: 18). Suppliers have emerged as a meaningful source of innovation and technological development. Bratzel explained that "[OEMs are] working to become the 'Partner of Choice' in their innovation ecosystem. That helps [OEMs] attract the best ideas from strategic partners and suppliers alike, giving them access to faster, better, and cheaper innovations - a major competitive advantage" (PriceWaterhouseCoopers, 2013: 20). The evolution of the tiered supplier network ecosystem (Clark & Fujimoto, 1991) continues to promote technological innovation as a means of cost reduction as well as enhancing the portfolio of lower tier suppliers to attract attention - and business - from higher tier suppliers. Much of this technological innovation flows to the end product produced by the OEMs. As seen in the dramatic success of Tesla Motors and its introduction of fully electric vehicles featuring extended range batteries - developed in partnership with consumer electronics manufacturer Panasonic, technological innovations in the product development process are arriving from a variety of internal and external sources.

CEO ROLE IN PRODUCT DEVELOPMENT PROCESS. While the external and internal influences on new product development may be significant, I am following prior research in the management literature to examine the micro-foundational influences on firm actions (Carpenter, Geletkanycz, & Sanders, 2004). Building off of the upper echelons perspective (Hambrick & Mason, 1984), this study attempts to expand the study of the influence of CEO psychological attributes on firm strategic actions (Finkelstein, et al., 2009). Recent work in the management literature has examined a variety of CEO attributes, including affectivity (Delgado-Garcia & De La Fuente-Sabate, 2010), charisma (Agle, Nagarajan, Sonnenfeld, & Srinivasan, 2006), personality (Resick, Whitman, Weingarden & Hiller, 2009), and narcissism (Chatterjee & Hambrick, 2007).

Given the complexity of the product development process, the direct role of the CEO across the entire development process may be difficult to ascertain. Industry insiders offer anecdotal evidence that CEOs may have the most influence on the process when final decisions regarding the launch of new products are made. As depicted by Clark and Fujimoto (1991), the earlier stages of the product development process involve myriad designers, engineers and technicians in the origination of product ideas and in the early prototyping and refinement of early designs. These complex earlier stages may fall under the direction of lead engineers and product planners, who insulate the upper echelons from the day-to-day, detailed engineering and design activities of potential new vehicles (Clark & Fujimoto, 1991).

As a means to better isolate the influence of the CEO on firm actions, I examined the influence of five auto industry CEOs on the later stages of the product development process. Throughout the automotive industry, senior executives - specifically the CEO - have been shown to be influential in the product development process. In their 2013 survey of automotive industry CEOs and other executives, PriceWaterhouseCoopers reported that 79% of executives responded that direct involvement of senior executives in innovation and development projects was critical for growth and future success. Naumann explained that "... it can happen that the CEO sits down next to the designer and dictates how the design should look" (2009: 2). While firms involve legions of designers, engineers and product planners to create new vehicles, anecdotal evidence from industry insiders and journalists demonstrate the direct influence of the CEO on the decision to go forward with new products.

In a discussion with Thomas Stewart and Anand Raman chronicled in *Harvard Business Review*, Toyota CEO Katsuaki Watanabe explained that in his unending quest for quality improvement, he imposed himself directly in the product development process:

> *"We have to improve quality even if I have to slow our pace of growth. After examining every project in our pipeline, product by product, market by market, we have created a new product-development plan. Some projects have taken a*

different direction, and I have halted others - just as workers stop the line. I suggested that we extend the deadlines for several projects by six months, even if that meant delays in new launches, and that we postpone or eliminate other projects." (2007: 77)

The famed Toyota process of continuous improvement, *kaizen*, empowers workers to stop the production line if quality problems are identified, and CEO Watanabe extended that premise to his direct influence on product development.

In his memoir, *Car Guys vs. Bean Counters*, Bob Lutz provides an example of the CEO's direct influence on the final stages of product development when recalling an interaction with GM CEO Rick Waggoner regarding the final design of the windshield and roof of the new Cadillac STS. Lutz recollected that, when faced with input from the marketers and the accountants, CEO Waggoner explained that "I'm tired of seeing financial analysis telling us it's better to do a lousy car earlier rather than a good one later. We are going to delay this program, and get it right!" (2011: 93). General Motors' process of developing more appealing vehicles - directed by Lutz himself - greatly benefitted from CEO Waggoner's direct support. The decision regarding the go/no-go production of the Cadillac STS was "one of many times that [GM CEO] Rick Waggoner's support, at a critical juncture, facilitated the changing of the product-creating culture" (Lutz, 2011: 93).

Lutz also greatly admired Volkswagen Chairman/CEO Dr. Ferdinand Piech, who he was able to observe during Lutz's tenure at BMW. He described Piech's direct influence on Volkswagen's products as a process "ruled with an iron fist ... He made portfolio decisions; he insisted on cars with advanced technology; he made design decisions, often ordering a redo shortly before production if he spotted an interior detail he didn't like, such as an air vent in a poor position" (Lutz, 2011: 205). Volkswagen emerged as a global power in the industry under Piech, and a producer featuring dynamic vehicles lauded for their design as well as performance.

In his book, *Once Upon a Car*, automotive journalist Bill Vlasic describes the direct influence Chrysler CEO Dieter Zetsche exerted on the perennially third-place Big

Three U.S. auto manufacturer's product line after the merger with Daimler. Vlasic explained that "Zetsche attacked [Chrysler's] shortcomings with a vengeance. He added fancy station wagons and a hot little two-seat convertible, but none of them sold all that well" (2011: 39). Vlasic further described the product-focused CEO's ultimate success during Zetsche's tenure as Chrysler CEO was "when Zetsche hit his home run, it was with the Chrysler 300 - a muscular statuesque real-wheel-drive sedan with an imposing grille and a generous helping of Mercedes components" (2011:39-40). Chrysler CEO Zetsche's tenure featured significant influence of Mercedes engineering and design elements on new Chrysler vehicles.

After the separation of Chrysler and Daimler/Mercedes, Zetsche was replaced by former Home Depot executive Robert Nardelli. Vlasic explained the zeal with which Nardelli attacked his job as the CEO representing Chrysler's new, private equity fund owners, Cerberus Partners. "Inside Chrysler, the engineers and designers were a bit stunned by how Nardelli gave orders," Vlasic chronicled, "In one week, [Nardelli] came up with two hundred specific improvements he wanted made to the interiors of its cars and trucks" (Vlasic, 2011: 135).

In addition to the failed marriage of Daimler and Chrysler, Vlasic discussed the various merger talks that occurred during the financial meltdown in the U.S. auto industry in 2008-2009. One of the potential combinations involved General Motors and Renault/Nissan, which was provoked by GM Board of Directors member Jerry York, who represented billionaire investor Kirk Krekorian's significant equity investment in GM. Vlasic captured the dynamics between York and Renault/Nissan CEO Carlos Ghosn. Vlasic wrote that "Ghosn ... was brimming with ideas ... [and] he impressed York with how he supervised decisions on vehicle styling. 'For our large-volume products, I'm looking at clay models before they are even finished,' Ghosn said" (2011: 135).

As seen with fellow CEOs Watanabe, Waggoner, Zetsche and Nardelli, Ghosn demonstrated that CEOs have direct, hands-on influence on product design and demonstrate the ability to start or stop product development projects in their tracks.

SAMPLING FRAME

To test the hypotheses, I chose to study the global automotive industry competing in the U.S. market from 1996 to 2010. A single industry was chosen to enhance the internal validity of the empirical analysis. The auto industry has served as a productive context for a diverse set of research in the management and strategy literatures, including core concepts of interest to this study of new product introductions, recalls and reputation (Nichols & Fournier, 1999; Rhee & Haunschild, 2006) and product development and innovation (Barber & Darrough, 1996; Clark, Chew, Fujimoto, Meyer, & Scherer, 1987). The industry features a diverse set of manufacturers competing across a broad set of product categories. Additionally, while a few firms have entered or exited the industry over the sampling frame, a strong core of competitors remained consistent over the course of the analysis period.

The dataset consists of firms manufacturing passenger cars, sport utility vehicles, light trucks, passenger vans and minivans. These vehicle categories constitute the majority of the passenger vehicles sold in the U.S. market. These vehicle categories also encompass the range of vehicles tracked by major industry analysts, including Ward's *Automotive Yearbook*, J.D. Power and Associates, and the automotive press (i.e., *Automotive News*, *Auto Week*). The sample excludes producers of medium and heavy-duty trucks, commercial vehicles (i.e., delivery trucks, ambulances, fire trucks), buses and motorcycles. The excluded vehicle categories serve significantly different customer bases than the included categories, and the product development, manufacturing and retail functions differ greatly from the included categories.

The sample includes 16 firms and approximately 240 firm-year observations, with a number of these firms producing multiple brands (i.e., Toyota Motor Company sells vehicles under the Toyota, Lexus and Scion brands in the U.S. market). Over the course of the sampling frame, manufacturers offered 47 different brands in the U.S. market. Firms were selected as the unit of analysis, rather than brand or model, in order to align the firm action data with the CEO regulatory focus data that is collected from the firms'

letters to shareholders. While multi-brand firms may have separate managers for each of the brands, major strategic decisions and corporate communications - particularly the annual report - are created and delivered by the CEO at the ultimate parent firm level. Within the 16 firms in the sample, a total of 57 CEOs served as leaders of their firms for at least one firm year. Over the course of the sampling timeframe, 13 of the 16 firm changed CEOs at least once.

The majority of the firms in the sample compete in more than one vehicle category (i.e., passenger cars, SUVs and light trucks), and offer multiple models within each vehicle category. For each firm year, the dataset encompasses all models offered by the manufacturer in that year. Within each model, all offerings within the model range are captured. Unique identifiers were created for manufacturer, model and specific model offering. For each firm-year model offering, specific descriptive and performance measures are included. Product reputation data is coded for each model year and aggregated to the firm level

The fifteen year sampling timeframe of 1996-2010 was chosen to include a variety of overall economic cycles and variability in product demand in the car/truck/suv categories. (See Figure 3 for vehicle sales data) Within the sampling timeframe, overall economic performance varied. The overall U.S. economy during the period of 1996 to 2001 demonstrated consistent growth. Following the terrorist attacks of September 11, 2001, the auto industry experienced a decline in automobile sales, but the decline was counteracted by the rise of SUV and light truck sales. Sport utility vehicles and light trucks continued to generate strong growth until the entire automotive industry suffered significant sales declines starting in 2007.

The sampling frame provides a comprehensive array of conditions and market changes that can be expected to provide a stringent test of the hypotheses. The U.S. and major global economies suffered through significant recessions from 2007 to late 2009. By the end of the sampling frame in 2010, overall economic conditions and automobile/light truck/suv sales showed signs of improvement. Other studies using the automotive industry as the primary sample also appear to use sampling time frames

encompassing a variety of industry and overall economic conditions; Barber and Darrough (1996) examined the effect of product recalls on U.S. and Japanese auto firm value over a 20 year period (1973-1992) and Rhee and Haunschild (2006) used a 25 year period (1975-1999) to examine the effects of firm reputation on market reactions to product recalls.

DEPENDENT VARIABLES

FIRM REPUTATION FOR QUALITY. In order to capture a comprehensive measure of reputation for quality, I computed overall problem rate scores from *Consumer Reports* (Conlon, Devaraj, & Matta, 2001; Levin, 2000; Rhee & Haunschild, 2006) for the years 1991-2010. *Consumer Reports* presents 5-point scores (represented by graphical scores) in a variety of automotive categories derived from annual surveys of the magazine's membership. Categories, termed "trouble spots" by *Consumer Reports*, include engine, transmission, brakes, suspension, body integrity and audio system performance, among others that reflect a comprehensive evaluation of a vehicle's performance, reliability and functionality. Following the procedure conducted by Rhee and Haunschild (2006), I computed an average of the quality survey categories for each model for a manufacturer for each firm-year. The average of the scores for all of the trouble spots enables "each model of each brand [to have] its own specific rating of quality" (Conlon et al., 2001: 1197). An overall, firm-level problem rate score was computed by averaging the model-level quality score for all of a manufacturer's models for the firm-year. In order to mitigate any dramatic one-year rise or fall in the survey results, I computed a trailing three year average quality sore for each manufacturer firm year (Conlon et al., 2001; Rhee & Haunschild, 2006). Finally, to encapsulate broader trends of the perceptions a manufacturer's quality, I computed a five-year trailing average, *product_quality*, to generate the overall problem rate score for a manufacturer (Rhee & Haunschild, 2006).

Rhee and Haunschild's (2006) auto industry study created a reputation measure comprised of two elements. The first element was a combination of the average scores for automakers in two consumer ratings - *Consumer Reports*' overall problem rating and

J.D. Power and Associates *Initial Quality Survey* ratings. These scores were combined through principal components analysis to create a single measure that was rescaled to a 0 to 1 scale, with 1 representing the highest reputation score for a manufacturer. The second measure used depreciation rates from the *Kelley Blue Book: Used Car Guide*. Average annual depreciation rates across a manufacturer's product line were computed and rescaled to a similar 0 to 1 scale as employed with the media ratings, where the lowest depreciation rate generated a score of 1 and the highest depreciation rate generated a score of 0. Finally, the authors created a composite measure through principal components analysis that incorporated both the consumer ratings and depreciation measures. The composite measure was rescaled to a 0 to 1 scale. The three reputation measures were highly correlated with each other, with Pearson correlation coefficients all exceeded 0.78. The authors determined that the composite measure, which incorporated both the third-party ratings and the depreciation rates - produced the best fitting models (Rhee & Haunschild, 2006: 113)

My reputation for quality score differs from the measure created by Rhee and Haunschild (2006) on two dimensions. First, I exclude the J.D. Power and Associates *Initial Quality Survey* results because this measure only captures any problems reported by owners after the first three months of ownership. My hypotheses concerning the effects of product recalls on product quality address all years of vehicle ownership, not solely the first three months of ownership. The *Consumer Reports* data is sourced from surveys distributed to approximately 8.4 million members[1], which incorporates problems and quality perceptions from vehicle owners across the entire life cycles of vehicles. Second, I exclude the Kelley Blue Book depreciation rates from my measure. The depreciation figures reflect "observable" quality in the form of suggested purchase prices and depreciation rates. The Blue Book values quantify vehicle conditions and expectations for future value, which may incorporate a variety of influences beyond a perception of quality, including market trends, manufacturers' maintenance programs,

[1] Consumer Reports membership reported in the Consumer Reports 2014 Annual Report.

and fuel economy standards. In order to focus my measure on perceptions of product quality, I excluded this component from my measure.

PROMINENCE. As a means of capturing the prominence of firms when examining their reputations, I collected annual counts of media mentions for each firm. I used a general media source, the *Wall Street Journal*, and coded an annual count variable, *wsj_mention*, to capture the results. The prominence count will reflect the appearance of a firm in the title or abstract of any article that appears in the media source.

A second measure, *all_media_mentions*, was coded to capture annual counts of media mentions of each firm in a broad collection of periodicals and newspapers in the U.S. market (as defined by "major U.S. periodicals" in the LexisNexis database). While the *wsj_mention* variable captures the prominence of a firm in a leading business periodical, consumers, competitors and other stakeholders may be exposed to firms in other media sources. The *all_media_mentions* variable captures the presence and prominence of a firm across this broad spectrum of potential media sources. As executed with the *wsj_mention* variable, the *all_media_mentions* coded the count of appearances of a focal firm in the headline or abstract of any article for each year. Results for multi-brand firms were aggregated into one count for each focal firm for each year.

INDEPENDENT VARIABLES

CEO-LEVEL REGULATORY FOCUS. In order to investigate CEO-level regulatory focus, I chose to conduct content analysis of firm communications, specifically letters to shareholders (Abrahamson & Hambrick, 1997; Clapham & Schwenk, 1991; Salancik & Meindl, 1984; Segars & Kohut, 2001). Over the past three decades, content analysis has grown to become a meaningful element of research in management and strategy (Duriau, Reger, & Pfarrer, 2007). Duriau and colleagues asserted that "content analysis . . . is promising for rigorous exploration of many important but difficult-to-study issues of interest to management researchers" (2007: 5).

I chose the Linguistic Inquiry and Word Count ("LIWC") software package (Pennebaker, Francis, & Booth, 2001) to conduct the text analysis on my corpus of text.

In addition to addressing challenges of reliability and processing speed of traditional text analysis, computer-aided text analysis ("CATA") facilitates the analysis of a large corpus of text for each focal firm and the evaluation of constructs across multiple organizations (McKenny, Short, & Payne, 2013). CATA facilitates the analysis of larger, more representative text samples than what could be generated through surveys, and facilitates longitudinal analysis. Finally, CATA enables researchers to collect organizational narratives in an unobtrusive manner, with the potential to contain fewer biases from recall and demand characteristics than surveys (McKenny et al., 2013).

The primary source of text for my analysis is the Letter to Shareholders in the annual report issued by each firm during the period of the study. The annual report is the primary source of formal communication between a firm and its shareholders (Barr, Stimpert, & Huff, 1992). While a majority of the content of the annual report for firms listed on exchanges under the jurisdiction of the U.S. Securities and Exchange Commission is fairly proscribed, the letter to shareholders is free of specific content requirements (Clapham & Schwenk, 1991). The letter to shareholders has been used to provide more nuanced insight into managerial and organizational cognitions than other firm communications such as press releases or third-party news articles (Abrahamson & Hambrick, 1997; Michalisin, 2001).

A number of scholars in the strategy literature have used the analysis of letters to shareholders to produce meaningful theoretical contributions. In one of the most influential studies of letters to shareholders, D'Aveni and MacMillan (1990) examined the focus of top management in successful and bankrupt firms on the internal and external environment. Importantly, the authors explain that content analysis of written firm communication is "useful for constructing perceptions and beliefs of their authors . . . [and] differences in language reflect differing cognitions and perceived realities" (D'Aveni & MacMillan, 1990: 639). Additionally, D'Aveni and MacMillan explain that letters to shareholders are useful tools for firm analysis as they "reflect the perceptions of organizational stewards because they are the product of the inputs of many individuals" (1990: 640). Abrahamson and Hambrick (1997) examined letters to shareholders for

firms across a diverse array of industries to examine industry-level discretion effects. Abrahamson and Hambrick (1997) find that industries with greater discretion may enable top managers to divide their attention to a broader array of strategic choices, which provides top managers the opportunity to focus on a more diverse array of factors - reflected in the variation of words used in the letter to shareholders. Michalisin (2001) explores the relationship between the words a firm uses in its letter to shareholders regarding innovation and a firm's actual innovative behavior. Michalisin (2001) suggests that letters to shareholders could reflect firm-level values, beliefs and ideologies, and should be the subject of further study of organizational cultures.

While the standard LIWC dictionary encompasses a significant volume of words and categories, LIWC also enables researchers to create custom dictionaries (Pennebaker et al., 2001). For this study, I am using a custom dictionary created by Gamache, McNamara, Mannor and Johnson (2013) that was specifically created for regulatory focus text analysis (the "Gamache dictionary"). The Gamache dictionary contains 52 words, with 27 words identified as promotion focus-related words and 25 words identified as prevention focus-related words (See Figure 4).

Gamache and colleagues (2013) developed the dictionary through both inductive and deductive processes for word identification (Short et al., 2010). The deductive process entailed the use of a thesaurus or synonym finder to identify potentially relevant words from key constructs. The inductive process included the identification of the most frequently used words in the primary text corpus to be analyzed. High frequency words were identified through the use of word count software, and words relevant to the regulatory focus construct were added to the working list.

A second, critical component of custom dictionary development is the validation of the final dictionary word list (McKenny et al., 2013; Pennebaker et al., 2007; Short et al., 2010). Gamache and colleagues (2013) validated the dictionary through the use of expert raters (Short et al., 2010). A panel of 25 expert raters were presented with the list of words being considered for inclusion in the dictionary, and these raters were tasked with indicating if the words appropriately reflected a promotion or prevention focus. The

list of words was presented to the raters in simple alphabetical order, with no words marked as either prevention or promotion focus. The final Gamache dictionary reflected the confirmation of the categorization of words as either promotion or prevention focus (Gamache et al., 2013).

CEO-LEVEL PROMOTION AND PREVENTION FOCUS MEASURES. The LIWC software generates percentages of occurrences in the text corpus of the words in the dictionary employed. For the Gamache dictionary, the promotion focus and prevention focus words are grouped into separate categories. The percentage results for the promotion and prevention focus words was coded for each year of each firm. The variable, *promo_value*, was coded for the promotion focus word percentages, and the variable, *prev_value*, was coded for the prevention focus word percentages. (See Figure 5 for CEO regulatory focus results by firm.)

While the CEO regulatory focus measure in my study is derived from the CEO's letter to shareholders, which has been shown to reflect the perceptions and beliefs of the author (D'Aveni & MacMillan, 1990) and should be expected to reflect individual CEO regulatory focus, further differentiation between an individual level and firm-level construct may be warranted. Researchers in psychology characterize regulatory focus as having a chronic component (Higgins, 1997; 1998) - which reflects a relatively stable attribute in individuals. With the potential for a CEO to prime an organization to reflect his or her regulatory focus (Kark & Van Dijk, 2007), one could consider that a firm may reflect a particular regulatory focus orientation for a significant period of time - beyond the tenure of any particular CEO.

In order to identify regulatory focus as a distinct, CEO level construct, I examined the dynamics of changes in regulatory focus measures within my dataset. My data is coded on a firm-year basis, and CEO changes are coded in the year they occur. For each CEO change, I computed the change in the regulatory focus measures for the focal firm between the CEO change year and the prior firm year. On average, the promotion focus and prevention focus measures changed 45% and 102%, respectively, when compared with the prior firm year. For all firm years, excluding the years of a CEO change, the

firms in my data experienced annual changes in promotion focus and prevention focus of 34% and 61%, respectively[2]. On a firm-by-firm basis, every firm that experienced a CEO change during my sampling frame (13 of 16 firms) featured greater average change in promotion or prevention focus in CEO change years than in non-CEO change years. This comparison suggests that the regulatory focus measures in my study better reflect the characteristics of the individual CEOs than of a firm.

Product Introductions

Number of Product Introductions.

The majority of the product level data was developed from Ward's *Automotive Yearbook* (Ward's, 1996-2010). Ward's *Automotive Yearbook* compiles detailed sales, manufacturing and product level data for all vehicles sold in North America. Ward's data has been used in a variety of automotive industry studies over time (Fisher, Griliches, & Kaysen, 1962; Yu, Subramaniam, & Cannella Jr, 2009, among others) and provides the most comprehensive primary source data for the industry. The variable *product_introductions* represents the annual count of new product introductions for each firm. The number of new product introductions is determined by a count of new models, such as Mazda introducing a 626 LX model to its existing lineup of 626 models, or a new series, such as Mazda introducing the MPV series. For firms with multiple brands, such as Honda with its Honda and Acura brands, the count is aggregated at the firm level.

Diversity.

I measured the extent to which a firm's new product introductions for the focal year consists of introductions in a variety of categories in the *diversity* measure. Each new product introduction is coded into one of a number of dichotomous categories spanning the product varieties of the automotive industry. Product categories are sourced from Ward's *Automotive Yearbook*'s Market Segmentation Criteria (Ward's, 1996-2010). Presence in the various categories serve as the input for the diversity equation, I use a Herfindahl-type index presented below:

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[2] All annual changes were computed on an absolute value basis to facilitate comparison.

$$\text{Diversity} = (P_i / P_t)^2$$

where P_i is the count of categories of products in which the focal firm i has a presence in and P_t is the total number of product categories for that year. A single category count for each firm year will be coded to avoid duplicate counts in the event that a firm has multiple vehicles in the same product category. Higher values represent firms that have a presence in a broader range of categories and thus more diverse new product introductions; lower values represent firms with a narrower range of categories and thus less diverse new product introductions.

DEVIATION FROM NORMS. The measure *deviation_from_norm* captures the extent to which a firm's new product introductions for a focal year differs from that of its competitors. Deviation is calculated as the sum of squared differences in proportion of the categories of new product introductions between the focal firm and the industry mean (Ferrier, Smith, & Grimm, 1999). The deviation measure is represented below:

$$\text{Deviation from Norm} = \sum_i (P_i - \bar{P})^2$$

where P_i is the proportion of categories of products introduced versus all categories for the focal firm, and $\bar{P}$ is the industry mean proportion (excluding the focal firm) of categories of product introduced versus all categories. A higher value represents firms that deviate further from new product introduction norms in the industry; lower values represent firms that deviate less that the norm for new product introductions.

PRODUCT RECALLS

I used product recall information collected from the National Highway Traffic Safety Administration (NHTSA) database. The NHTSA enforces the National Traffic and Motor Vehicle Safety Act of 1966 that requires automakers to produce vehicles that meet federal safety standards. Automakers are subject to recalls when their products are determined to not meet standards for safe operation or protection of drivers and passengers. The database holds records for all manufacturers offering products for sale in

the U.S. markets, and recall data has been used in recent management studies including Rhee and Haunschild (2006).

For this study, I coded a count variable, *recall_count*, to capture the number of recalls by firm for each focal year. In order to best align CEO influence on product recall behavior, I coded recall counts by vehicle model year. As recalls can be issued for vehicles in any year on or after its production, this perspective captures issues associated with a vehicle produced in a specific year - rather than simply capturing the number of recalls issued in any focal calendar year. A specific vehicle production year is more closely aligned with the CEO for that year, rather than the count of recalls announced in the year. Model year recall counts incorporate the counts of recalls for that model year across the entire sampling frame. For multi-brand firms, one count was computed that encompasses all of the firm's brands.

The NHTSA data provides additional detail regarding each recall included in the database - specifically the unique source of the recall. Three sources are recorded in the data: 1.) Manufacturer sourced recall - the recall is initiated by a manufacturer's report to the NHTSA; 2.) Third-party sourced recall - the recall process was initiated by consumers reporting problems to the NHTSA (coded as "odi" in the NHTSA database); or 3.) Government testing-sourced recall - the recall process was initiated by problems identified in vehicle testing by the Department of Transportation (coded as "ovsc" in the NHTSA database). While these subcategories are captured in the NHTSA data, my reading of the management literature indicates that scholars focus on the total recall measure when studying the effects of automotive recalls on firm outcomes (Bae & Benitez-Silva, 2011; Bromiley & Marcus, 1989; Rhee & Haunschild, 2006, among others). As a result, I focus on the total number of recalls in my analysis. (See Figure 6 for distribution graphs of all independent and dependent variables.)

CONTROL VARIABLES

GENERALIST VS. SPECIALIST. As seen in earlier studies in the auto industry, one firm-level measure of interest to researchers has been the determination of specialist

versus generalist firms (Dobrev, Kim, & Carroll, 2002; Rhee & Haunschild, 2006). In this study, specialist firms may behave differently than generalists firms with regard to new product introductions, in particular. A generalist firm may be competing in a broad array of product categories and may offer products across these categories in order to address consumer demands and competitor moves. A specialist firm may be centered on a limited number of models and product categories. These firms may be more inclined to refine existing products, or introduce new products very infrequently. In the automotive industry, niche players such as Rolls Royce, Lamborghini or Smart offer two or fewer models and have introduced new products approximately once per decade. I compute the spread of engine capacity, *engine_spread*, for an automaker for a focal year (Rhee & Haunschild, 2006). Engine capacity is reported in liters, and typically ranges from a low of 1.0 liters to a high of over 6.0 liters for some of the larger pickup trucks and SUVs. Engine capacity spread is computed by subtracting the lowest engine capacity from the largest engine capacity for a manufacturer annually.

Specialists will generate results with a small spread, as these producers may focus on one type of engine or commit to a number of similar capacity engines to leverage manufacturing synergies and reduce costs. A generalist firm will most often generate a larger spread, which will reflect the firm's commitment to a broader product line. A broader product line may require significant financial commitments to various engine manufacturing facilities and diverse product design and development resources. For firms with multiple brands, one calculation was made per year that incorporates the engine capacities of all of that manufacturer's brands.

FIRM AGE. Younger firms may be aggressively developing new products to establish legitimacy in the industry. Conversely, new firms may be resource constrained that may focus their attention on fewer new product categories. New firms may also come to the market with one dominant product innovation that they expect to disrupt the current dominant design. *Age* was computed annually as the elapsed time since the firm's founding.

FIRM SIZE. *Firm size* was computed as the natural log of a firm's annual total sales. *Firm size* controls for economies and diseconomies of scale that may be present at the firm level (Hitt, Hoskisson, & Kim, 1997). *Firm size* was computed using total revenue, in U.S. dollars - converted for non-U.S. headquartered firms - and the consolidated revenue for multi-brand firms from COMPUSTAT or firm annual reports.

MULTI-BRAND FIRM. A number of the firms in the sample are comprised of multiple brands (i.e., General Motors included Chevrolet, Pontiac, Buick, Cadillac, Saturn, Hummer, GMC, and Oldsmobile, or some subset of these brands, over the course of the sampling period). A dichotomous variable, *multi_brand_firm*, was coded to identify single or multi-brand firms.

HOME REGION. Given that the U.S. market is served by automotive manufacturers from across the globe, a three item categorical variable, *region*, was coded to reflect the home region of each manufacturer. The categories are 1.) U.S.; 2.) Europe; and 3.) Asia. While many manufacturers locate production or design facilities in the U.S., each firm faces different strategic pressures based on its home region. Throughout the sampling period, Asian manufacturers faced varying foreign exchange rates with the U.S. dollar that may have influenced different product and manufacturing strategies than were faced by other competitors. Similarly, the European manufacturers faced a significant, persistent sales decline across Europe in the later years of the sampling frame.

INDUSTRY SALES VOLUME. Total industry volume is a measure of annual sales volume (units) for the U.S. market. During the sample frame, the automotive industry experienced significant sales variability and this measure enables me to control for some of the variability. The natural log of the measure, *industry volume*, was taken to accommodate an uneven distribution.

CEO CHANGE. The dichotomous variable, *ceo_change*, is coded to capture any changes in focal firm CEO during the focal year. Any changes in CEO was coded = 1, while a focal firm with no changes in CEO for the focal year was coded = 0.

CEO CHARACTERISTICS. In addition to any change in focal firm's CEO, personal characteristics of a focal firm's CEO were collected. Specific CEO characteristics that

were coded include CEO age (coded as *ceo_age*), CEO functional background (coded as a categorical variable, *ceo_background*) to include 1= financial; 2 = engineering; 3 = legal; 4 = marketing, and a dichotomous variable, *ceo_insider*, coded = 1 if the CEO ascended to the CEO position from a previous position within the focal firm or coded = 0 if the CEO was appointed to the position from a position outside the focal firm. In any year with a CEO change, the characteristics of the CEO in office at year end were captured in the CEO characteristics variables.

FIRM ACCOUNTING PERFORMANCE. The primary measure of firm performance in this study is return on assets (ROA). ROA was calculated annually for each focal firm, and captured in the variable *roa_annual*. ROA is a secondary source financial measure (others include return on investment and profit growth) that is nonbiased and particularly useful for single-industry studies such as this one (Venkatraman & Ramanujam, 1986). ROA was selected over return on sales to avoid any autocorrelation effects with the firm size control variable. Secondary measures such as ROA produce a uniformity in measurement across all firms in the sample (Venkatraman & Ramanujam, 1986). (See Table 1 for a complete list of variables.)

ESTIMATING PROCEDURES

Given the nature of the data in this study - panel data with a number of limited range, nonnegative dependent variables - I used Poisson regression to estimate the parameters for my analysis of new product introductions and recall counts. With panel data, it is possible that certain firm-specific factors remain constant across the years of my sample (such as firm management). This implies that the firm observations may be correlated across years, which would violate the assumption of independence across observations needed for ordinary least squares regression. With the Poisson regression approach, I use fixed effects at the firm level to account for any unobserved heterogeneity among the firms. I employed the xtpoisson model command in STATA 12. Linear regression was used to estimate results for product quality, as this measure features a

more normal distribution. I used linear regression, specifically the xtreg function in STATA 12, to predict these results.

In order to test the mediation hypotheses, I used the process outlined by Preacher and Hayes (2004, 2008) that focuses on the testing of the IV-Mediator-DV relationship through bootstrapping[3]. Unlike the Baron and Kenny (1986) process that outlines a four step test that includes the requirement for a significant direct relationship between the IV and the DV, the Preacher and Hayes (2004) process establishes a mediating relationship (IV-Mediator-DV) without the need for the direct relationship. Zhao and colleagues (2010) facilitated further interpretation of the Preacher and Hayes bootstrapping test results by illustrating five possible mediation outcomes - ranging from complimentary or competitive mediation, which include a significant direct relationship between IV and DV; to indirect-only mediation, which satisfies the Preacher and Hayes (2004, 2008) mediation outcome (IV-Mediator-DV) and equates to the full mediation result identified through the Baron and Kenny (1986) process; to non-mediation.

[3] In their 2004 study, Preacher and Hayes created testing syntax for the SAS and SPSS statistics software packages. I used STATA syntax created by Eric DeRosia (2013) that was specifically developed to mimic the Preacher and Hayes tests for STATA.

Chapter 5 - Results

In this chapter I present the results of the analysis used to test the hypotheses presented in Chapter 3. First, I provide an overview of the descriptive statistics and correlations among the various dependent, independent and control variables used in this study. Then I discuss the various regression modeling approaches used to test the specific hypotheses, present the results of the modeling, and indicate the effects of the modeling results on the hypotheses.

Descriptive Statistics and Correlations

I have computed descriptive statistics for the independent and dependent variables central to my study, and present the results in Table 2 below. Of note, the variance of some of the dependent variables (number of new models, total recalls, and both prominence measures) that display a Poisson-shaped distribution is greater than the mean for these measures. This may suggest overdispersion of these data. Often, a recommended solution for testing hypotheses involving these outcome variables with multiple regression is negative binomial models. However, a number of scholars have recommended against using negative binomial modeling for longitudinal data with fixed effects - as is the case with the data for this study - as the regression outcomes produce results that do not reflect true fixed effects (Allison & Waterman, 2002; Greene, 2007). As a result of this guidance, I use Poisson regression for the testing of my hypotheses. Additionally, my approach is consistent with Gamache, et al. (2013), who addressed similar overdispersion concerns with longitudinal data and fixed effects and used Poisson regression to test their hypotheses.

Table 3 presents the means, standard deviations and correlations for the variables in this study. Correlations among variables were generally low, with a number of correlations significant at the $p < 0.05$ threshold. First, in examining the correlations among the independent and control variables and the new product introduction measures, a number of significant correlations were identified. Both the diversity (0.60) and

deviation from norms (0.13) have significant correlations with the new product introduction measure. The correlation between the prevention focus measure and new product introductions (0.13) and new product introduction diversity (0.22) are significant. Among the control variables, the number of models offered by a firm is highly correlated with the number of new product introductions (0.83). Both the firm size (0.52) and multi-brand firms (0.44) control variables were moderately correlated with new product introductions.

The deviation from norms measure is correlated (0.17) with new product introduction diversity measure. Among the control variables, engine spread (0.85), number of models (0.81), firm size (0.74) and multi-brand firm (0.74) were significant correlations with new product introduction diversity. Similarly, the only significant correlations between the new product introduction deviation from norms and the independent and control variables were engine spread (0.14), firm size (0.14) and multi-brand firm (0.14).

Additionally, when examining the correlations between product recall-related measures and the independent and control variables, a few results should be highlighted. Among the control variables, the number of models (0.73), engine spread (0.77), firm age (0.31), CEO background (-0.37), CEO age (-0.17) and industry volume (0.19) were significantly correlated with total recalls. Similar results were generated for the correlations between variables for the three recall subsets generated from the NHTSA data and the control variables.

In examining the correlations of independent and control variables with the prominence DVs (i.e., media mentions in the Wall Street Journal or among a broader array of major newspapers and periodicals), one can see the relatively strong correlations between the new model introduction counts and the prominence measures. Specifically, the correlation between new model introductions and prominence (0.43) was significant; additionally, this correlation was also significant (0.65) when the more broadly defined prominence measure was considered. Additionally, the diversity measure was significant when correlated against both prominence measures (0.74 and 0.72). Also, the deviation

from norms measure is significant when correlated to the two prominence measures (0.17, 0.14). Among the control variables, the correlations between engine spread (the measure of generalist vs. specialist) and both measures of prominence were significant (0.75 and 0.79, respectively). Additionally, the correlations between 1.) firm size and both measures of prominence (0.63 and 0.64, respectively); 2.) multi-brand firm and both measures of prominence (0.64 and 0.63, respectively); 3.) the number of models and both measures of prominence (0.73 and 0.88, respectively); and 4.) firm age and both measures of prominence (0.34 and 0.47, respectively) were of note.

An examination of the correlations among the independent and control variables and the product quality DV produced a few results of note. CEO prevention focus was correlated with product quality (0.20). Among the control variables, the correlations between product quality and engine spread (-0.23), firm size (-0.13), and region (0.32) were significant.

With select correlations producing strong results, further tests for multicollinearity were conducted to examine the variance inflation factor (VIF) results. The VIF values all fell below the recommended 10.0 level (Bobko, 2001). As a further robustness check, I estimated the models using random effects, but the Hausman test suggested that fixed-effects estimates were more appropriate given the nature of my sample (Cameron & Trivedi, 2009).

Modeling Approaches

A significant majority of the variables of interest in this study are count variables, including the number of new products introduced, the number of product categories filled by new products, the number of recalls, and the number of media mentions. Each of these variables of interest is a non-negative count variable, or a transformed version of a non-negative count. As a result, the primary modeling technique used for these variables was Poisson regression with fixed effects. With the longitudinal nature of the dataset, I employed the xtpoisson modeling option in STATA 12. Poisson regression was used to test hypotheses H1 - H8. The dependent variable for Hypotheses 9a-9b is product quality

reputation, which demonstrates a more normal distributions. The components of the panel for this longitudinal analysis - firm and year - remained the same as used in the Poisson regression modeling executed for H1-H8, but linear regression modeling was used with xtreg in STATA 12. A summary of results from testing all hypotheses are presented in Table 8.

NEW PRODUCT INTRODUCTIONS

Hypotheses 1 through 6 examine the influence of CEO regulatory focus on various aspects of new product introductions. Hypothesis 1 predicts that a CEO with a promotion focus will motivate a firm to introduce a larger number of new products. Models 2 on Table 4 presents the results for the Poisson regression analysis of the count of new models (DV = *product_introductions*), using the one year lag of the regulatory focus variables.

Hypothesis 1 was supported for a 1-year lag, as the promotion focus measure was significant (Model 2: IRR = 1.191, $p < .01$). The coefficients reported in Table 4 are presented as incident rate ratios (IRR) to facilitate interpretation of the Poisson regression[4]. Hypothesis 2 predicts that a CEO's prevention focus will reduce the number of new products a firm introduces. The results of Model 2 on Table 4 supports the hypothesis for a 1-year lag. The coefficient for the prevention focus measure was significant (Model 3: IRR = 0.641, $p < .01$).

Hypotheses 3 and 4 predict the influence of regulatory focus on the diversity of new products introduced. Hypothesis 3 predicts that a promotion focused CEO will influence firms to introduce new products in a large number of product categories. The

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[4] Incident rate ratios are computed by exponentiating the coefficients produced in the Poisson regressions. The 1.191 IRR coefficient can be interpreted as if a CEO's promotion focus measure increased by one unit, the rate ratio for all recalls would be expected to increase by a factor of 0.191, while holding all other variables in the model constant. Similarly, IRR coefficients less than 1.0 would indicate a decrease in the rate ratio for the dependent variable of interest (Hilbe, 2008).

results from Models 3 on Table 4 was not significant for the effect of promotion focus on diversity (Model 2: IRR = 0.988, n.s.), and Hypothesis 3 was not supported. Additionally, Hypothesis 4 predicted that a firm influenced by a CEO's prevention focus would introduce new products in fewer categories. Hypothesis 4 was not supported, as prevention focus had no significant effect on the diversity of new products introduced (Model 3: IRR = 1.014, n.s.).

Hypotheses 5 and 6 predict the influence of CEO regulatory focus on a firm's conformity to industry norms. First, Hypothesis 5 predicts that a firm led by a CEO with a promotion focus will be negatively related to conformity of industry norms. Results in Models 4 on Table 4 are in the opposite direction of the hypothesized direction (Model 4: IRR = 0.661, $p<.10$). Hypothesis 5 is not supported. Hypothesis 6 was not supported, as the IRR coefficient for a firm with a CEO with a prevention focus orientation was not significant (Model 4: IRR = 1.590, n.s.). None of the control variables was significant in explaining their effects on new product introduction deviating from industry norms.

Recall Behavior

The primary dependent variable of interest in the examination of the influence of regulatory focus on firm mistake avoidance behavior is the count of total recalls issued (*recall_count*). The prevention and promotion focus predictor variables were lagged one year to reflect the time needed for a CEO's regulatory focus to permeate a firm's operations (Kark & Van Dijk, 2007) and to capture some of the lag in the influence of the CEO on product development (as improvements to existing vehicles and new product introductions roll out over time). The coefficients reported in the model results are presented as incident rate ratios (IRR) to facilitate interpretation of the Poisson regression.

Hypothesis 7 examined the effect of a prevention focus on the number of recalls issued - predicting that a greater prevention focus would produce fewer recalls.. The results are presented in Table 5, and indicate that the prevention focus predictor was significant (Model 2: IRR = 0.783, $p < .05$). As a result, Hypothesis 7 is supported.

PROMINENCE

Hypotheses 8a predicts that firms led by CEOs with a promotion focus will garner greater prominence through attention from the media. I modeled the influence of a 1-year lag of CEO promotion focus on two measures of prominence: 1.) media mentions in the Wall Street Journal (*wsj_mention*) and 2.) media mentions in a broader collection of U.S. newspapers and periodicals (*all_media_mentions*). For the prominence measure derived from *Wall Street Journal* mentions, the results from Model 4 on Table 6 do not support the hypothesis (IRR = 1.074, n.s.).

For the prominence measure derived from mentions in all major media sources, the results on Table 6 produce results not supporting the hypothesis. The 1-year lag of CEO promotion focus produces a non-significant results (Model 5: IRR = 1.075, $p<.10$). As a result, Hypothesis 8a is not supported.

In order to examine the mediating hypothesis addressing the effect of new product introductions on the relationship between CEO promotion focus (lagged 1 year) and prominence (H8b). I used the multiple regression estimating procedures outlined by Preacher and Hayes (2004, 2008). Each of the new product introduction variables (number, diversity, and deviation from norms) was tested separately. Hypothesis 8b was partially supported, as the bootstrap test (5,000 iterations) of the indirect effect of new model introductions on the relationship between CEO promotion focus and prominence (measures by *Wall Street Journal* mentions) produced a 95% confidence interval that did not include 0, indicating full mediation (Preacher & Hayes, 2008). The two other product introduction mediation measures, diversity and deviation from norms, produced 95% confidence intervals that included 0, signifying non-significance (Table 7) (Preacher and Hayes, 2008).

REPUTATION FOR PRODUCT QUALITY

To examine the influence of CEO prevention focus on perceptions of a firm's reputation for quality, I modeled the influence of CEO prevention focus on the product

quality measure. Hypothesis 9a predicts that CEO prevention focus will result in more positive perception of a firm's reputation for quality. Model 2 on Table 6 presents the non-significant result for the linear regression (Model 2: $\beta = -0.043$, n.s.). As a result, 9a is not supported.

In order to examine the mediating hypothesis addressing the effect of product recalls on the relationship between CEO prevention focus (lagged 1 year) and product quality, I used the multiple regression estimating process proscribed by Preacher and Hayes (2004, 2008). Hypothesis 9b was supported. The mediating effects of the total number of recalls on the relationship between CEO prevention focus and reputation for quality generated results indicating partial mediation (Zhao, et al., 2010), with the mediated effect and the direct effect exist and point in the same direction. (Table 7)

Sensitivity Analysis

One important consideration for the modeling approach is the lag of the regulatory focus measures to accommodate time necessary for a CEO's influence to spread throughout the firm. For this study, I examined various lags of the regulatory focus measures, specifically one, two and three years. The strategy literature has examined the effects of various lags of CEO-related measures and their effect on firm behavior. A one-year lag has been employed by a variety of scholars (Decker & Mellewigt, 2012; Eggers & Kaplan, 2009; Marcel, Barr & Duhaime, 2010) when considering the influence of CEO behavior. Marcel and colleagues (2010) examine the relationship between a one-year lag of a CEO's cognitive framework and competitive retaliation. Additionally, the authors used firm letters to shareholders as their source for CEO cognition measures. Decker and Mellewigt (2012) tested a one-year lag of CEO behavior - among a series of firm-level and industry-level factors - on firm industry exit decisions. Finally, Eggers and Kaplan (2009) use letters to shareholders to identify CEO focus of attention and test a one-year lag of that measure on competitive and strategic responses to technological change.

Finkelstein, Hambrick and Canella address the concept of lagging a CEO psychological measure when examining the influences on strategic actions by commenting that "if the researcher is interested in studying the effects of executive psychological characteristics on subsequent strategic choices, and perhaps even on further subsequent performance, any psychological data gathered must "await," possibly two years or more, the strategic and performance measures being explained" (2009: 50). Additionally, new product development projects in the automotive industry can take a number of years to reach the market, and any immediate, real-time influence of a CEO's regulatory focus on product development could still take significant time to reach the market. The three year lag could provide the basis for my results to reflect the time potentially necessary for a CEO's regulatory focus to permeate the firm's culture (Brunninge, Nordqvist & Wiklund, 2007; Finkelstein et al., 2009). The three year lag also could be a sufficient timeframe for strategic change efforts to materialize (Brunninge et al., 2007). The CEO-level control variables were also lagged to align with the regulatory focus measures.

A one-year lag of CEO regulatory focus was used for a majority of the tests of the hypotheses in this study, as this time lag best reflected the dynamics of the relationship between CEO regulatory focus and the firm actions in this study. Regulatory focus is deeply ingrained in the motivation for individual behavior (Higgins, 1997), and this deep-seated behavioral driver may be a dominant characteristic that comes to the fore more quickly when I examine CEO behavior.

I conducted sensitivity analysis of 2 and 3-year lags of CEO regulatory focus. While the guidance from Finkelstein and colleagues (2009) indicated a period of two or more years may be appropriate for top management psychological constructs to permeate throughout the firm, there has been less study of the effects of CEO regulatory focus in the management literature and, as a result, the "window" for any permeation of CEO regulatory focus may be shorter or longer.

In examining the sensitivity analysis of the 2 and 3-year lags, the results produced limited significant outcomes. Hypothesis 1 (CEO promotion focus → + New model

introduction count) was not supported when using a 2 or 3-year lag of CEO promotion focus (See Table 9 for a complete summary of all sensitivity analysis). Hypothesis 2 (CEO prevention focus → ─ New model introduction count) was not supported. Hypotheses 3 and 4 are not supported in the sensitivity analysis. Hypotheses 5 and 6 examined the influence of CEO regulatory focus on the deviation of new product introductions from industry norms. The sensitivity analysis produced no support for H5 or H6 when using a two or three year lag of CEO promotion focus. The sensitivity analysis produced a significant result when examining the relationship between CEO regulatory focus and firm recall behavior. Hypothesis 7 (CEO prevention focus → ─ Total product recalls) was supported from the 2-year lag of CEO prevention focus. Finally, I conducted sensitivity analysis of the direct and mediated relationships between CEO regulatory focus and the multiple components of firm reputation. Hypothesis 8a predicted the positive, direct relationship between CEO promotion focus and firm prominence. When using the prominence construct measured by mentions in the *Wall Street Journal*, the analysis produced support for the 2-year lag of CEO promotion focus. Hypothesis 8b was not supported for the mediation of the relationship between CEO promotion focus and prominence by the count of new product introductions when using the 2 or 3-year lag of CEO promotion focus. Hypothesis 9a (the positive relationship between CEO promotion focus and product quality reputation) was not supported in the sensitivity analysis. When examining the mediating effects of product recalls on the relationship between CEO prevention focus and product quality reputation, Hypothesis 9b was supported when using a 2-year lag of CEO prevention focus. Specifically, total recalls produced significant, partial mediation results.

Chapter 6 - Discussion

In this final chapter I summarize my findings and assess how these results influence both theory and practice. I address the limitations of the study and identify additional research opportunities to further develop and test the ideas presented here.

Summary of Findings

This study proposes a variety of hypotheses regarding the influence of a CEO's regulatory focus on firm strategic actions, specifically new product introductions and product recalls. Further hypotheses addressed the influence of CEO regulatory focus on multiple elements of firm reputation. The empirical results provide limited support for the hypothesized relationships. CEO promotion focus (lagged one year) received support for its influence on the number of new products a firm introduced in a year (H1). Sensitivity analysis provided no additional support for the hypothesis when using a 2 or 3-year lag of CEO promotion focus. CEO prevention focus (lagged one year) was shown to reduce the number of new products introduced (H2). Sensitivity analysis identified no additional support for the negative influence of a 2 or 3-year lag of CEO prevention focus on new product introductions. Firms led by a CEO with promotion focus (H3) or prevention focus (H4) were not found to influence the diversity of new products introduced. Finally, firms led by CEOs with either promotion (H5) or a prevention focus (H6) lagged one year were not found to have an impact on new product introductions deviating from industry norm. Sensitivity analysis found support for a 3-year lag of CEO promotion focus positively affecting the product introduction deviation from norms.

For new product introductions, the success of the 1-year lag of both promotion and prevention focus on total new products introduced may indicate the CEO's influence on the "final" decision regarding new products. Rather than having specific creative input or reticence when pursuing early stage new product ideas (as there are no statistically significant results for 2 or 3-year lags), the CEO may have more specific and

direct influence as the projects reach fruition and the commitment of significant marketing and promotion resources are needed to initiate the launch of new products.

New product diversity may be a function of too many other influences to recognize the direct impact of CEO regulatory focus. External market forces and customer preferences may drive the scope/diversity of new products. Firms may be chasing competitors' entry into different market sectors, rather than relying on internally-generated motivations for the scope of their product lines. We continue to see more and more firms entering the small SUV market (often called the CUV market) as firms recognize the increasing demand and profitability of these vehicles. Brands that have not played in that sector before - including Porsche, Jeep, and a number of others, including hyper-luxury brands Bentley and Maserati - have all entered or plan to enter the CUV market. While these new product introductions are developed in-house, the motivation for increasing the product line diversity may be generated externally.

Prevention-focused CEOs may limit the number of models introduced to avoid errors that might arise from the drive to pursue all alternatives that is a feature of a promotion focus. One may expect that a CEO's regulatory focus may influence the culture or overall identity of the organization (Kark & Van Dijk, 2007), and, in particular, the CEO's regulatory focus may have the most influence one year prior to product introductions, where the CEO may be a significant component of the final approval process. This influence may shape a firm's final product introduction strategies. Among the control variables, CEO insider, firm size and ROA were significant and strong positive influences on the number of new models introduced. New product introductions may be a function of a variety of resource-intensive processes, and larger firms with significantly strong financial performance likely have access to greater resources to develop more new product.

When examining the influence of a CEO's regulatory focus on a firm's recall behavior, the empirical results supported hypotheses 7. The total number of product recalls issued by a firm was found to be reduced by a firm led by a CEO with a prevention focus (H7) lagged one year. In the sensitivity analysis, I found support for a

two-year lag of CEO prevention focus reducing the number of total recalls (H7). The sensitivity analysis did not find any further support for the influence of CEO promotion focus on product recalls.

The success of 1-year lag of CEO prevention focus on the issuance of total product recalls may again reflect the influence of the near-launch influence of the CEO. While major production tooling and supplier inputs have already been incorporated into vehicle development prior to the 1-year lag, a prevention focused CEO may have significant input and approval over final "fit-and-finish" elements such as interior materials, infotainment/navigation system functionality, and overall feel that would all contribute to problems that may trigger recalls.

Additionally, this study proposed a series of hypotheses predicting the influence of CEO regulatory focus elements of firm reputation - prominence and reputation for quality. The empirical results produced some interesting and statistically significant results. A one year lag of CEO promotion focus was not found to have a positive influence on prominence, when using the *Wall Street Journal* or the broader composition of media as the source of media mentions, which did not support Hypothesis 8a. Further, CEO prevention focus (lagged one year) was not found to influence a firm's reputation for quality (H9a).

Mediation testing for H8b and 9b produced varied support for the hypotheses. Hypothesis 8b received partial support, with the number of new product introductions generating full mediation for the relationship between CEO promotion focus, with a one year lag, and prominence (measured by *Wall Street Journal* mentions). Mediation proposed in Hypothesis 9b received support from total recalls on the relationship between CEO prevention focus, lagged one year, and product quality.

The nearer-term influence of CEO promotion focus on new product introduction counts can be seen in the mediation hypothesis as well. The relationship between the 1-year lag of CEO promotion focus and firm prominence is fully mediated by new product introductions. The final approval/input of a promotion focused CEO one year prior to new product introduction could enable more products to reach the market the following

year, which could generate significant "buzz" surrounding a firm's new vehicles - and garnering greater attention in the *Wall Street Journal*.

The sensitivity analysis produced some additional support for the mediation hypotheses. The relationship between the two-year lag of CEO prevention focus and product quality reputation was partially mediated by the total recall measure.

CONTRIBUTIONS TO THE LITERATURE

The empirical findings of this dissertation contribute to the upper echelons and reputation literatures as well as furthering the use of diverse methods in strategy research. The primary question driving this study was the issue of the influence of CEO regulatory focus on firm strategic actions and firm reputation. The use of CEO regulatory focus enabled me to delve further into a previously underexplored CEO psychological influence on decision making and firm actions. The study extends the insight into the "black box" of psychological influences on firm action (Finkelstein et al., 2009) and attempts to answer the ongoing call for greater connectivity between micro and macro concepts in strategy. To my knowledge, this is one of the first studies to empirically test the influence of regulatory focus on specific firm actions using unobtrusive measures of regulatory focus. My study demonstrates that a CEO's particular regulatory focus - serving as the source of a firm's strategic eagerness or strategic vigilance - can influence firm behavior with regard to new product introduction behavior and the issuance of product recalls. First, I am able to partially support the notion that strategic eagerness - as embodied by CEO promotion focus - can lead to the introduction of a greater number of new products. Strategic eagerness positions a firm to boldly pursue more opportunities than competitors led by CEOs with less prominent promotion focus. With regard to strategic vigilance, I am able to show that firms led by a CEO with a prevention focus will reduce the number of product recalls issued. A CEO with a prevention focus may shape the firm's approach to new product development to align with her concerns for safety and attention to detail that enable the firm to do what is expected and "right" (i.e., producing products with fewer defects) regarding the development of new products.

An additional component of the contribution to the upper echelons literature is the reaffirmation of CEO regulatory focus as a viable, distinct psychological influence on firm behavior. As recently initiated by Gamache and colleagues (2013), CEO regulatory focus can be identified through unobtrusive measures and examined as a CEO-level motivation for firm action and goal pursuit.

The limited support for my hypotheses predicting the influence of CEO regulatory focus on new product introductions is also interesting. While my study centers on one industry in an attempt to eliminate potentially confounding exogenous industry forces on new product development, the product development process in the auto industry may be too complex to link changes to any one element. While top management remain extremely influential in shaping overall product strategy (Khurana & Rosenthal, 1998), the diversity and deviation from norms of new product introductions that reach the market may entail a variety of organizational hurdles that cannot be surmounted by CEO influence alone. Specifically, the CEO has little ability to directly influence customer preferences, and customer demands may have a dramatic influence on the types of new products that ultimately reach the market (Clark & Fujimoto, 1991). My measures of new product introductions only account for products that reach the market, and cannot account for CEO influence on idea generation or preliminary design approaches that may be more diverse or non-conforming. A CEO may be able to prime an organization to adopt elements of her regulatory focus (Kark & Van Dijk, 2007), but the specific action of bringing different types of new vehicles to the market may reflect a variety of influences beyond CEO regulatory focus.

The second component of my research question is the direct and mediated influence of CEO regulatory focus on a two-dimensional model of firm reputation (Rindova et al., 2005). My study aims to answer the call for greater insight into the antecedents of the reputation dimensions outlined in the model. The direct influence of CEO regulatory focus on reputation - either prominence or product quality - did not find support. The specific mediating actions in my theoretical model - new product introductions and product recalls - received some support in the examination of their

ability to mediate the relationship between CEO regulatory focus and two dimensional model of reputation developed by Rindova and her colleagues (2005). In the auto industry, there may be many more factors that are influencing firm reputation that are not captured by my study. It appears that more study is needed to refine the influence of specific firm actions on firm prominence and reputation for quality.

I do contribute to the reputation literature by moving beyond the *Fortune* Most Admired survey to develop measures for quality reputation. Specifically, I reaffirm the example of Rhee and Haunschild (2006) and leverage automotive industry-specific sources - the *Consumer Reports* vehicle trouble indices, in particular - to compute a reputation for quality measure. This approach may be suitable for additional studies of the auto industry while moving the discussion of quality reputation away from the often derided *Fortune* survey (Brown & Perry, 1994), and the approach could be effective for future studies of industries with similar specialist media.

Implications for Practice

While this study makes a variety of contributions to the strategy literature, there may be additional insight for practitioners, particularly with greater insight into the regulatory focus of a firm's CEO. For boards of directors, the selection of a CEO is a vital decision for a firm and gaining a better understanding of the motivations and personality characteristics that can influence a CEO's decision making could enable boards to select a CEO better aligned with their expectations for the firm's current or desired strategy. Investors and analysts may be able to better predict firm behavior and performance by understanding a CEO's regulatory focus. By understanding how regulatory focus could contribute to a consistency of actions in pursuit of the ideal or the "oughts" of promotion and prevention focus, investors and analysts may perceive firm behavior as a broader system of actions that are, in part, driven by a CEO's particular regulatory focus. CEOs may be able to better understand how their own personality characteristics influence their decision making processes. In communicating their strategic decisions - particularly through their letters to shareholders - CEOs can better

appreciate how the words used in their letters affect stakeholders and the perceptions of their firms' actions.

Additionally, CEOs may consider using their regulatory focus priming capabilities (Kark & Van Dijk, 2007) more broadly to better align all elements of the firm to their perspective - beyond products and production investigated in this study. This CEO priming capability could also ensure a more consistent approach to customers, suppliers and other stakeholders in order to ensure a more coherent approach to firm actions, which could be a positive influence on the principals that construct the various dimensions of a firm's reputation. Top management teams may be better able to understand the rationale for their own CEOs' decision-making processes and better align their processes to coordinate with the CEO's influences. All of these elements could positively contribute to the enhancement of a firm's reputation and potentially benefit a firm's overall performance.

Limitations and Future Studies

My study focuses on two firm actions - new product introductions and product recalls - that have been the subject of a variety of previous studies in the strategy literature (Katila & Ahuja, 2002; Rhee & Haunschild, 2006). However, the dynamics of the product development and recall process in the automobile industry may be too complex to isolate as being under the direct influence of the CEO. The processes include a broad array of participants, both within the focal firm (i.e., dedicated design studios, market researchers, engineers) and outside (i.e., component suppliers, alliance partners), who all influence the product development process. Additional factors, such as changing government environmental and safety mandates as well as ever-changing consumer demand, also influence product development and safety behavior. While some of these factors can be controlled in my study, many cannot. As a result, the direct effects of CEO regulatory focus on product development and recall behavior could be muted or obfuscated.

One potential challenge to the structure of my study is the concern that the regulatory focus construct is a firm-level construct rather than an individual-level construct. If the construct is anchored at the firm level, the study would suffer from extremely limited variability in the regulatory focus measures and would eliminate the need to consider the individual level influence on firm behavior that has become a foundational element of recent strategy literature. Additionally, a firm-level regulatory focus measure would not enable me to unpack the influence of specific CEOs on firm behavior. Anecdotal evidence of the specific influences of individual CEOs on firm behavior (Lutz, 2011; Stewart & Raman, 2007; among others) is persuasive, and the widespread nature of the CEO influence on firm actions in the auto industry appears sufficient to merit further investigation. The upper echelons perspective (Hambrick & Mason, 1984) has established the study of individual or specific top management team members' influence on firm behavior. In my data, CEO regulatory focus measures change more significantly upon a change in CEO than in years without a change in CEO (i.e., promotion focus and prevention focus measures change 45% and 102%, respectively, compared with the prior year, versus 34% and 61%, respectively, excluding the years of a CEO change), indicating the significant role of the individual CEO construct rather than a firm-level construct.

Hambrick and colleagues (Finkelstein et al., 2009; Hambrick, 2007; Hambrick & Mason, 1984) have long espoused the study of CEOs and top management teams as a critical means by which researchers can gain better insight into firm-level behaviors. One of the means by which upper echelons and other strategy researchers have gained further insight into the "black box" of top management team decision making has been through the use of unobtrusive measures (Chatterjee & Hambrick, 2007; Fanelli, Misangyi, & Tosi, 2009; Gamache et al., 2013; Kaplan, 2008). In my study, the primary unobtrusive measure of regulatory focus was derived from text analysis of the letter to shareholder. While the letter to shareholders has been established as a viable means of accessing managerial, specifically CEO-level, cognition (Abrahamson & Hambrick, 1997), the structure and purpose of the letter may limit the appearance of words associated with

prevention focus. While the letter to shareholders is unregulated regarding its content from a legal perspective, it is typically positioned as the leading element of the glossy annual report. In the auto industry, annual reports typically feature glowing feedback from customers and flattering pictures of new vehicles - interspersed with detailed financial reporting. The underlying message is one of growth and expansion, or how the firm expects to achieve growth and expansion, and this positioning may reduce the use of words associated with a prevention focus. Safety and preserving the status quo (both features of a prevention focus orientation) could be purposely excluded from the language used in the annual report and in the letter to shareholders. Measuring regulatory focus from the language used in the letter to shareholders may be constrained by these conditions.

Another potential influence on the content of the letters to shareholders is the threat of the deliberate attempts to shape the word usage by promotion-focused CEOs. A promotion focused CEO is driven to be more attuned to positive outcomes (Higgins, Shah, & Friedman, 1997), and, as a result, may be predisposed to avoid prevention focus-toned words in corporate communications. This predisposition towards highlighting success and the deep focus on pursuing additional opportunities could skew the content of the letters and potentially invalidate the use of text analysis as a means to establishing unbiased promotion and prevention measures.

Two of my new product introduction measures, diversity and deviation from industry norms, are dependent upon firms introducing new products in industry categories beyond their existing rosters. Although variability in these measures does exist and is captured in my study, this variability appears somewhat limited. This may be a feature of the automotive industry, as the development, production, marketing and sales efforts for every model are extensive. CEOs and firms may be reluctant to venture too far beyond their existing offerings for fear of limited market acceptance, as well as significant up front commitments to tooling and other manufacturing accommodations that may be necessary to serve a new sector.

The study focuses on one industry, automobile manufacturing in the U.S., in order to reduce the number of exogenous factors that could influence the results. However, this one-industry structure limits the generalizability of the results. The firms in this study are all large, asset intensive firms attempting to leverage product design, manufacturing expertise, sourcing capabilities and marketing and sales networks to compete on a global basis. Their core products - passenger cars, light trucks and sport utility vehicles - are governed by extensive safety and environmental regulation. The specific dynamics of the industry may generate market conditions that are unique, and render any conclusions from this study as exclusive to the auto industry.

Further, prior firm performance - both financial or non-financial results - may affect a firm's selection of a CEO in the succession process. In order to preserve successful ongoing performance, a firm may elect to select a CEO with similar characteristics to the previous CEO, or, conversely, a firm may attempt to significantly change a pattern of performance by selecting a CEO with a markedly different regulatory focus. These proactive CEO choices could alter the content of the letters to shareholder as the letters may not reflect the depth of the CEO's core regulatory focus but may reflect the tenor that the Board wanted to maintain by the selection of the latest CEO.

I believe there are several avenues for future research. As a means of addressing any potential limitations of measuring CEO regulatory focus solely through text analysis of letters to shareholders, scholars could expand the text corpus used in the regulatory focus measurement. In addition to letters to shareholders, CEOs address stakeholders in a variety of other media. Beyond the communication in the annual report, CEOs typically participate in earnings calls with the investor community. While portions of these sessions may be scripted, the earnings calls typically include a question and answer component. By analyzing the language used in these less formal, unedited statements, researchers may gain a more comprehensive understanding of CEO regulatory focus. Additional sources of text for analysis could include company press releases, which often include direct quotes from the CEO. While these releases may be more formal and

composed by corporate communications personnel, the CEO will typically review important releases and approve the language used.

In addition, research could expand beyond the auto industry to test the new product introduction and product recall actions in different industry contexts while still being able to leverage specific reputation measures. For example, the video game publishing industry faces challenges to introduce new and improved games across a variety of categories (i.e., first-person shooter, sports, massively multi-player games, etc.) that could test the diversity and deviation from norms constructs. In addition, video game manufacturers preserve existing titles with add-ons and other incremental innovations similar to auto manufacturers ongoing improvements to their existing vehicle lineup and to address previous bugs or errors. Further, the video game industry is tracked and covered by a number of industry-specific periodicals. These periodicals often rate individual games and could provide additional detail for quality reputation measures. Finally, the industry is global, featuring a variety of publishers who are covered extensively in the media, which could provide sufficient data for prominence and reputational standing measures. Other industries, including children's toys and commercial airlines could provide equally compelling dynamics. I believe that these industries could provide the means for inter-industry comparisons and further generalizability of the results from this study.

Regulatory focus appears to be a distinct, micro-level construct that is gaining recognition as an important influence on CEO and firm behavior. I believe that promotion and prevention foci should both be considered as meaningful, direct influences on firm behavior, and this study begins to unpack the varying influences of these characteristics on CEO behavior. I hope that the growing literature using regulatory focus as a critical evaluative construct continues, and this study encourages further research towards greater understanding of the influence of regulatory focus.

Appendix

Figure 1. Regulatory Focus Behaviors

	Idea Generation	**Product Development**	**Recalls**	**Reputation**
Promotion Focus	• Generate more alternatives (Brockner, Higgins & Low 2004) • Enhances creative thought (Higgins 1997) • Motivated to avoid errors of omission (Higgins 1997; 1998) • Increased creative insight (Friedman & Förster 2001) • Volume of output to ensure hits (Higgins 1997) • Seek accomplishment / Aspirational (Higgins 1998; Higgins, Shah & Friedman 1997)	• Generate more innovation ideas (Rietzschel 2011) • Focus attention on innovative value of a product (Werth & Förster 2007) • Engage in higher degrees of innovation and new product development (in turbulent environments) (Wallace, Little, Hill & Ridge 2010) • Stronger influence of growth-related information (Förster & Werth 2009) • Increases intention to commit the firm to entrepreneurial action (McMullen & Zahara 2006)	• More risk tolerant (Florack & Hartman 2007) • Willing to make more risky decision/choose riskier alternatives (Florack & Hartman 2007; Levine, Higgins & Choi 2000) • Emphasize speed over accuracy (Förster, Higgins & Bianco 2003)	• May make too many speculative assumptions and increase risks (Hmielski & Baron, 2008) • Predilection for riskier decision making (Levine, Higgins & Choi 2000) • Emphasize speed over accuracy (Förster, Higgins & Bianco 2003)
Prevention Focus	• Generate fewer alternatives (Brockner, Higgins & Low 2004) • Decreased creative insight (Friedman & Förster 2001) • Seek to attain correct rejections (Higgins 1997) • Undermines creative thought (Higgins 1997)	• Generate fewer innovation ideas (Rietzschel 2011) • Focus attention on dependability of a product (Werth & Förster 2007; Förster & Werth 2009) • Organizational focus toward operating improvements (Wallace et al., 2010) • Excessive time and energy committed to refining a decision to reduce chances of failure (Hmielski & Baron 2008)	• More risk averse (Florack & Hartman 2007) • Preference for stability (Liberman, et al. 1999) • Focus attention on dependability of a product (Förster & Werth 2009) • Avoid costly errors - focusing on operating improvements (Wallace et al., 2010) • Emphasize accuracy over speed (Förster et al., 2003)	• Preference for stability (Liberman, Idson, Camacho & Higgins 1999) • More conservative decision making (Levine, Higgins & Choi 2000) • Emphasize accuracy over speed (Förster, Higgins & Bianco 2003) • Predilection for the status quo (Higgins 1998)

Figure 2. Theoretical Model

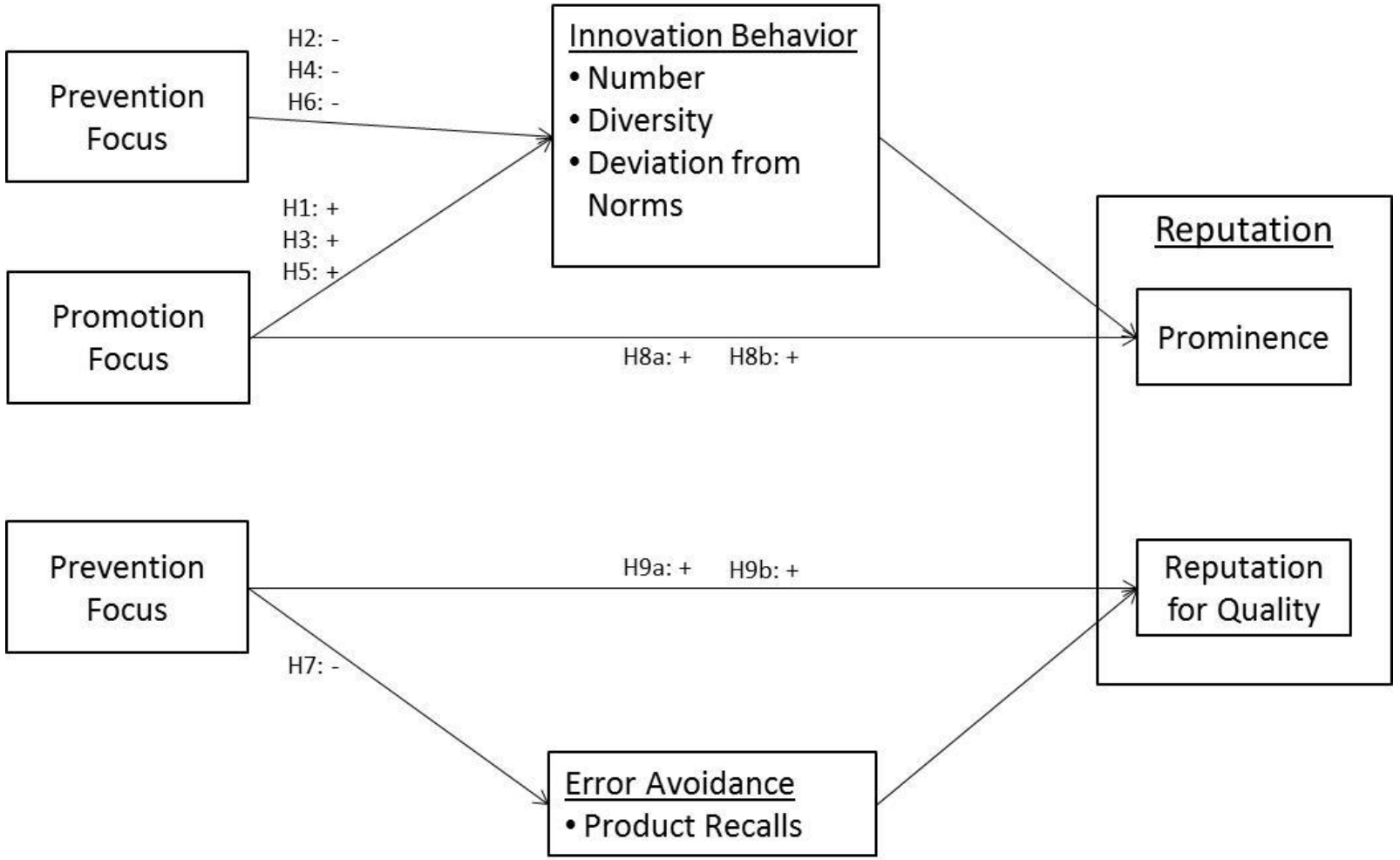


Figure 3. Vehicle Sales Data

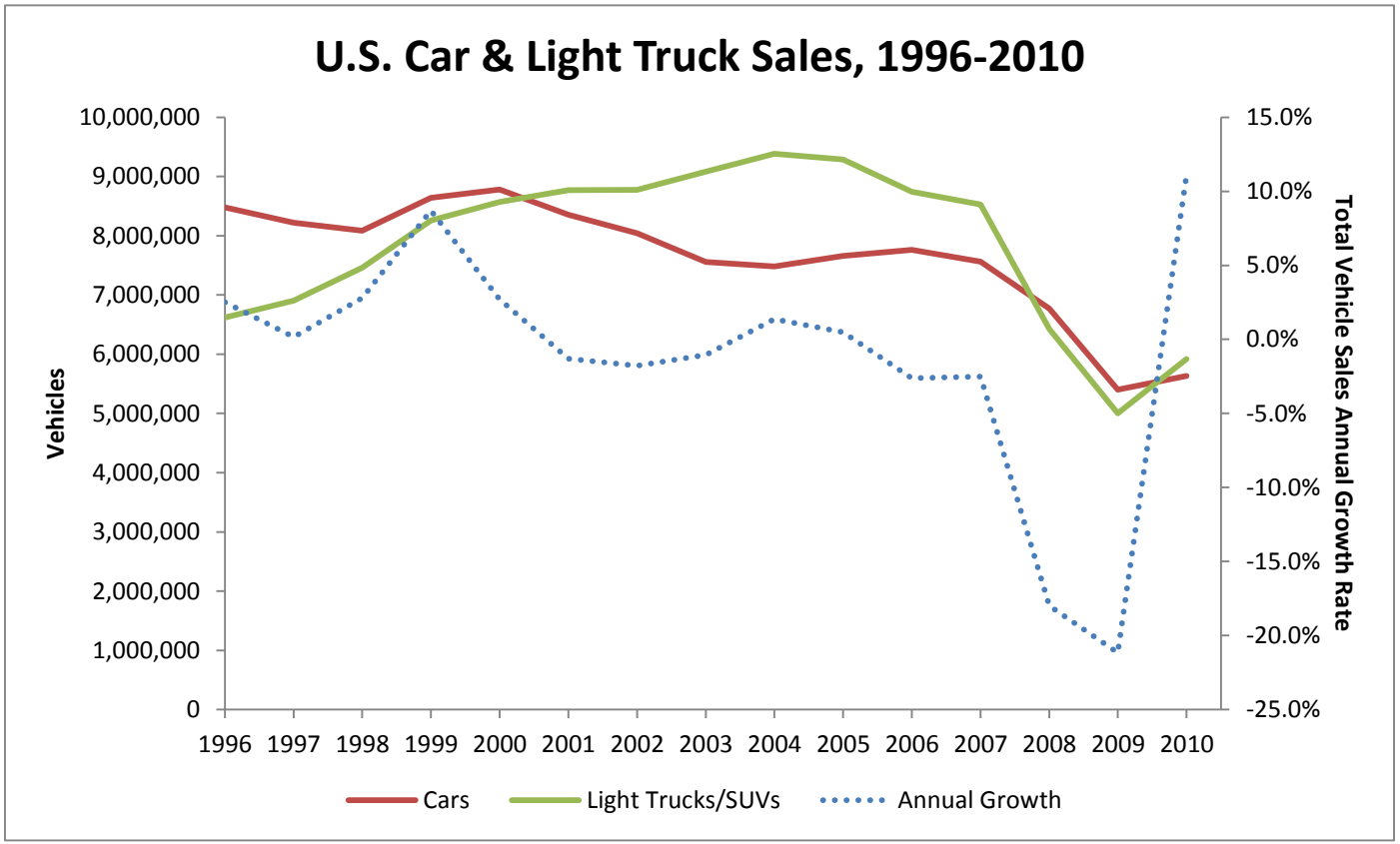


Figure 4. Gamache Dictionary

Promotion Words	**Prevention Words**
Accomplish	Accuracy
Achieve	Afraid
Aspire	Anxious
Aspiration	Avoid
Advancement	Careful
Attain	Conservative
Desire	Defend
Earn	Duty
Expand	Escape
Grow	Escaping
Gain	Evade
Hope	Fail
Hoping	Fear
Ideal	Loss
Improve	Obligation
Increase	Ought
Momentum	Pain
Obtain	Prevent
Optimistic	Protect
Progress	Responsible
Promotion	Risk
Promoting	Safety
Speed	Security
Swift	Threat
Toward	Vigilance
Velocity	
Wish	

Figure 5. Text Analysis Results

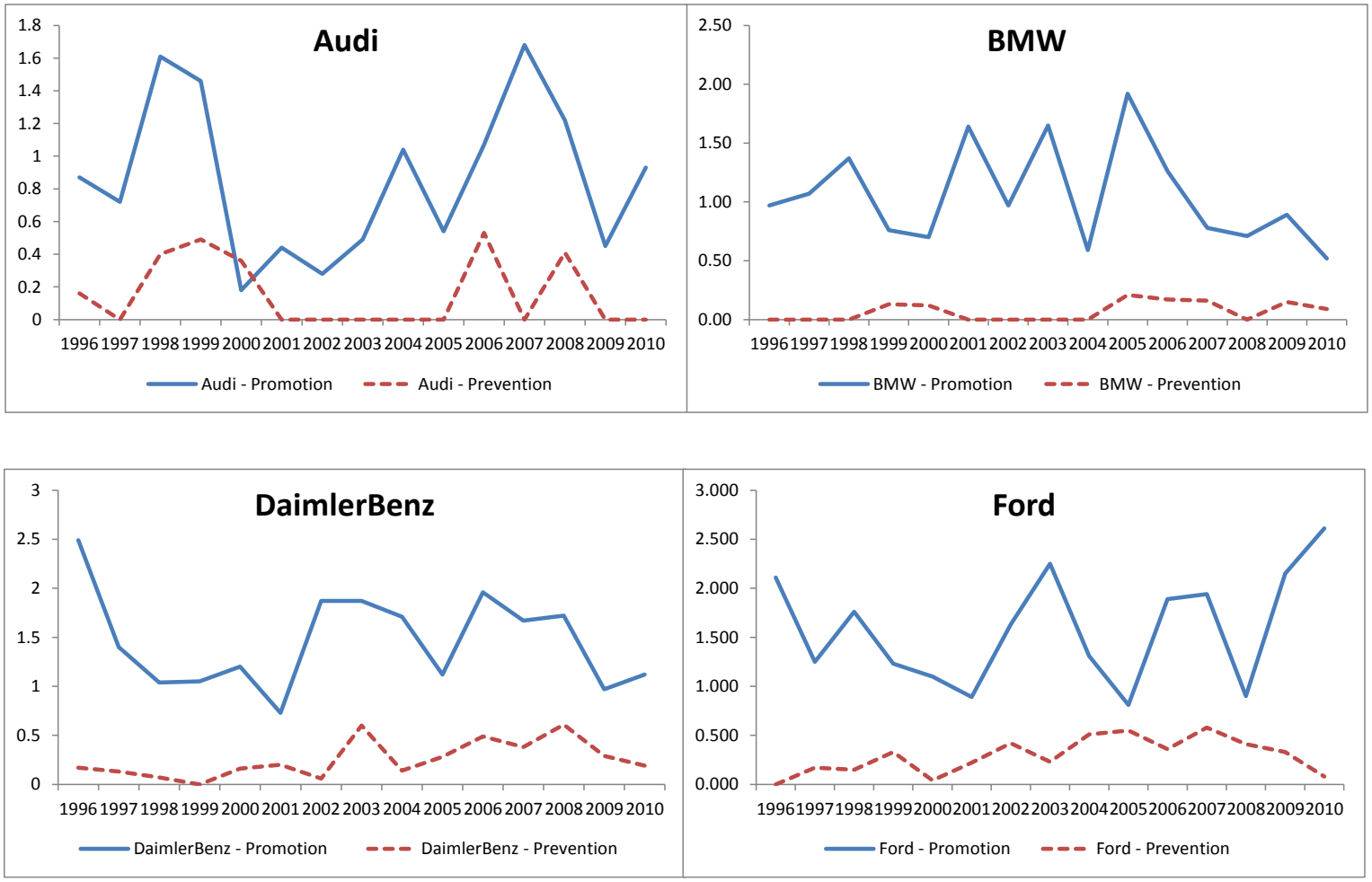
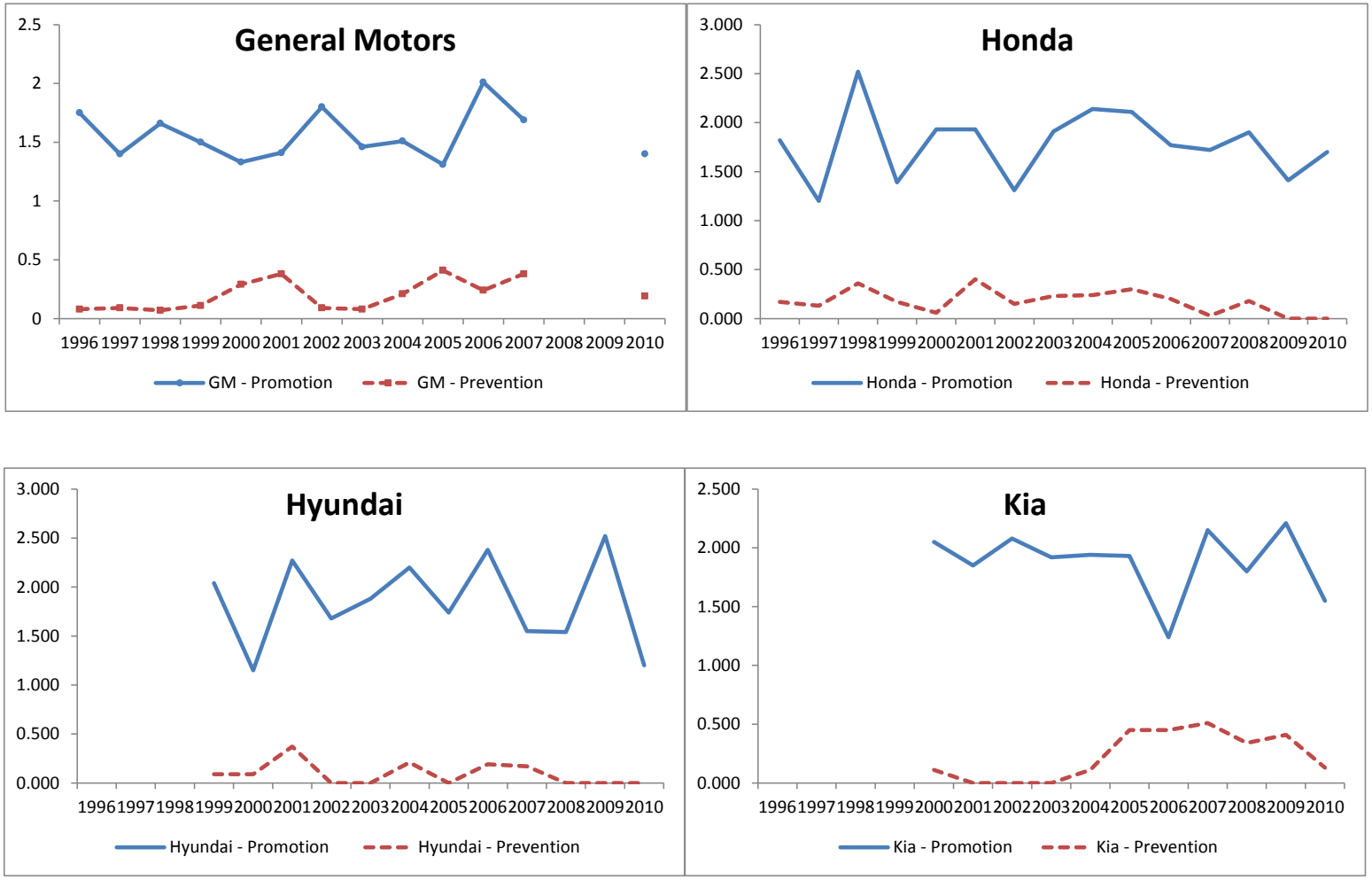


Figure 5. Text Analysis Results, continued



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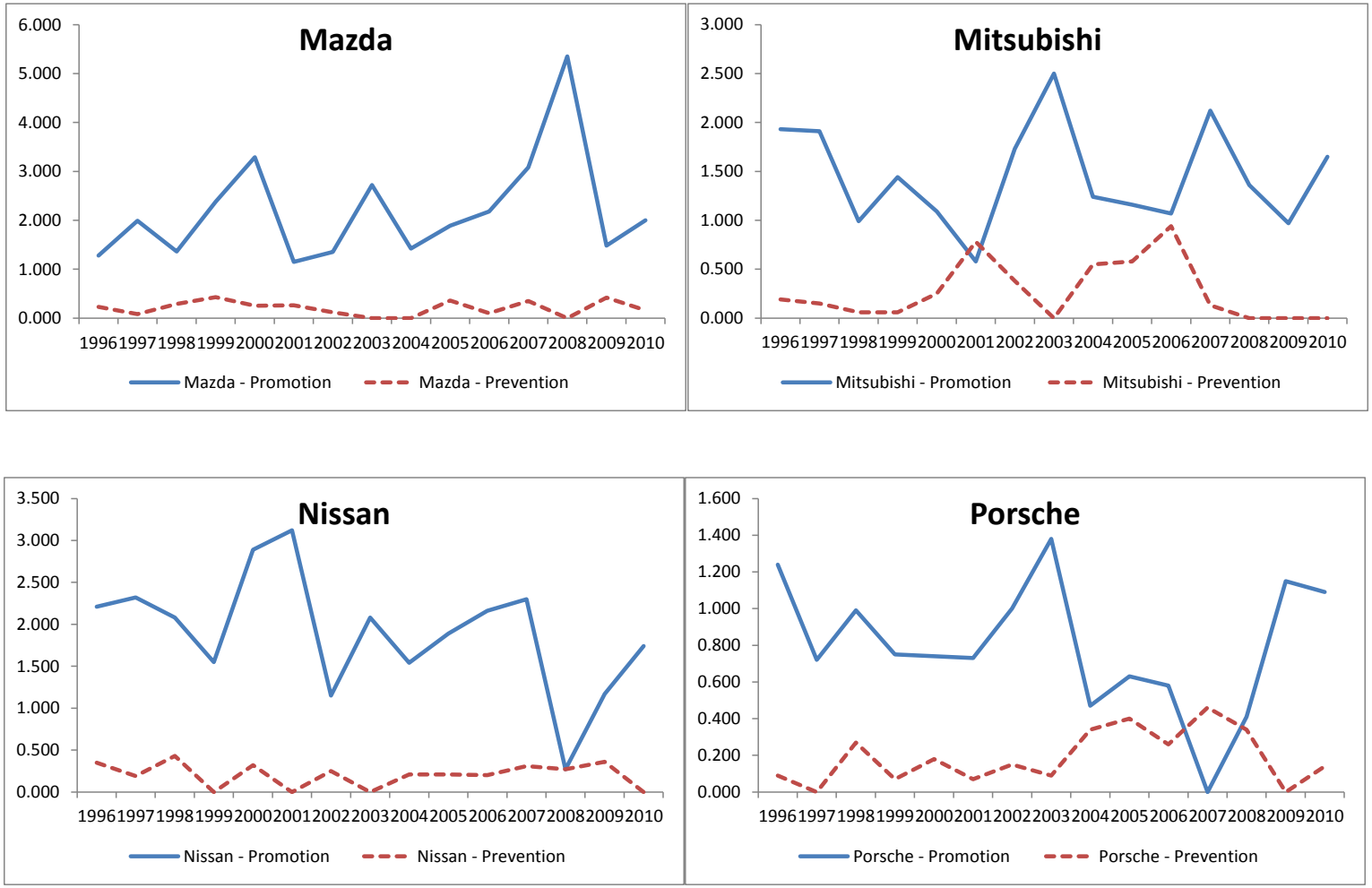

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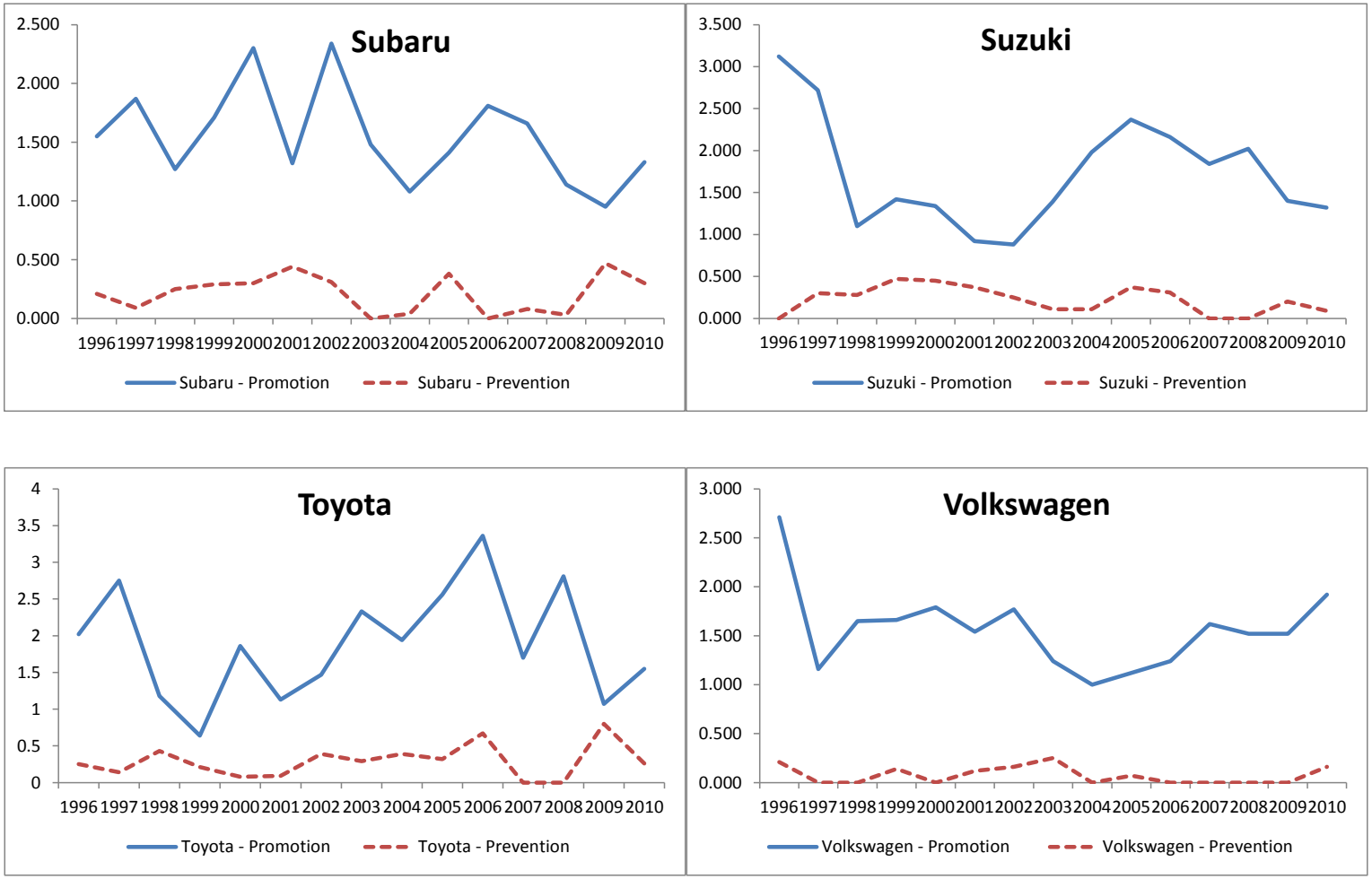
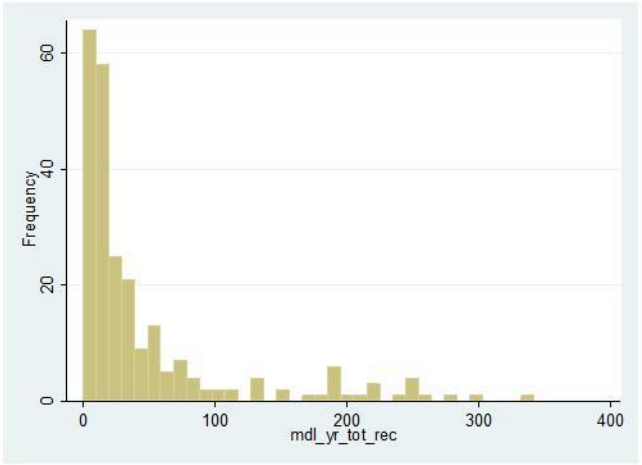
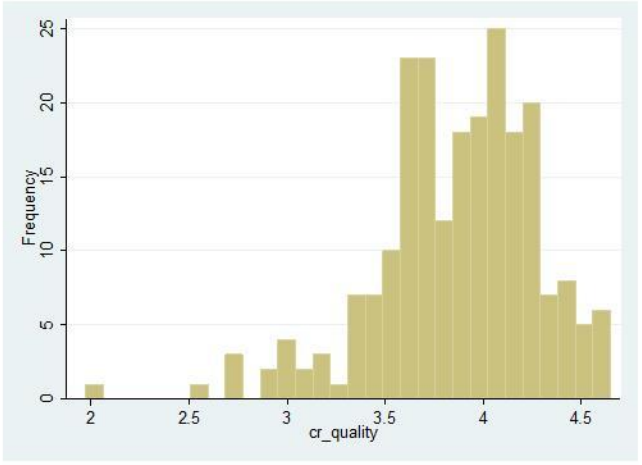
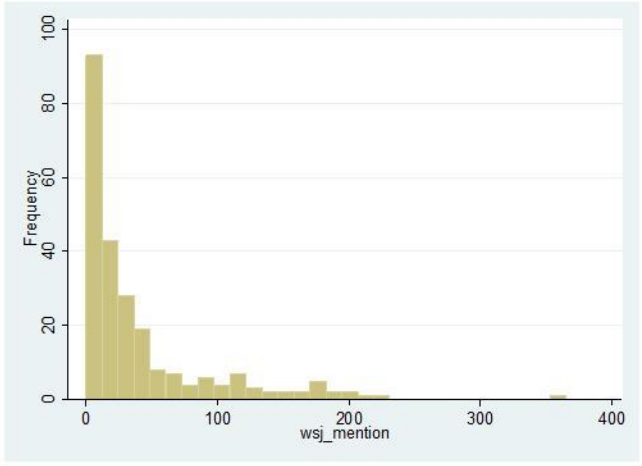


Figure 6. Dependent Variable Distributions







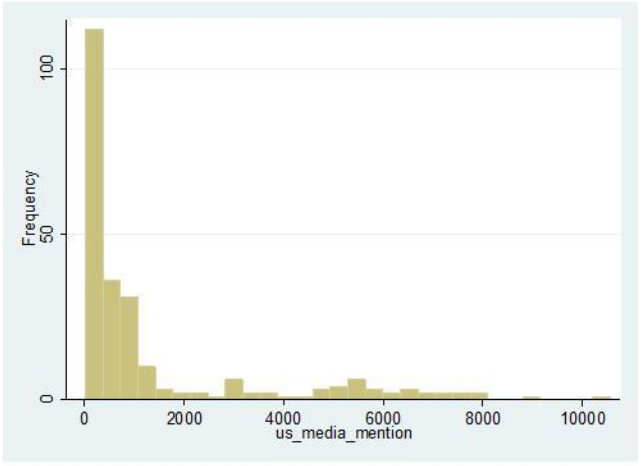
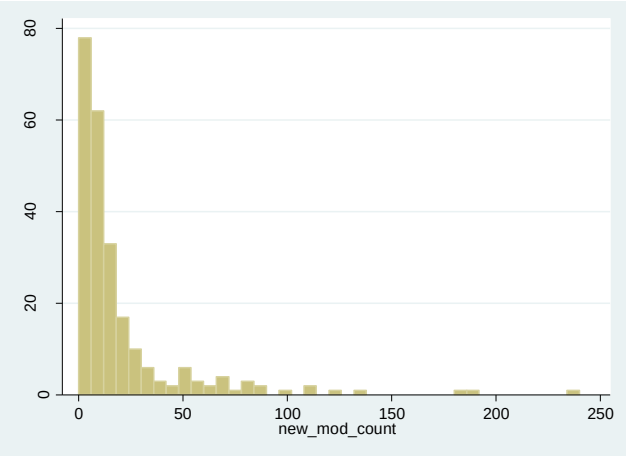
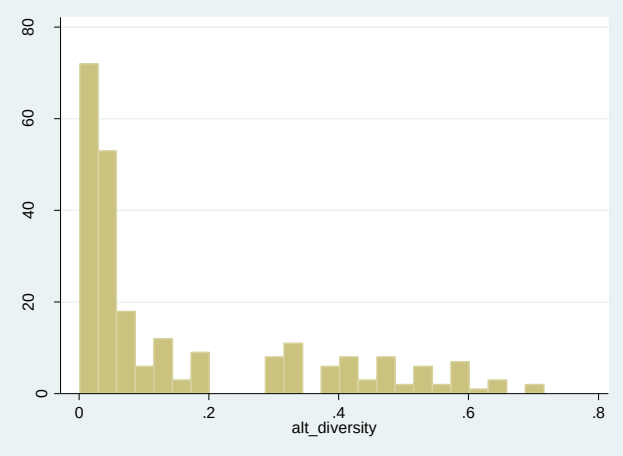


Figure 6. Dependent Variable Distributions, continued





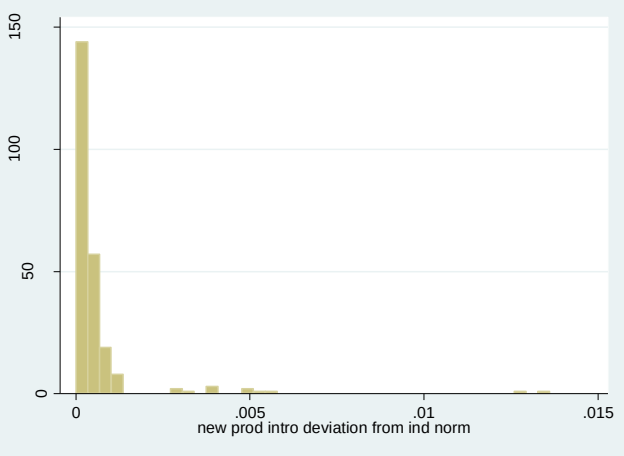


Table 1. List of Variables

Category	Description	Variable Name	Source	Calculation	Variable Type
Dependent Variables					
Reputation for Quality					
	Consumer Reports Quality Reputation	cr_quality	Consumer Reports annual trouble indices	Trailing 5-year average of 3-year average of firm-level trouble index	Continuous
Prominence	**Media Prominence**	wsj_mention	Wall Street Journal headlines	Count of mentions in WSJ headlines or abstract	Count
		all_media_mentions	Broad selection of U.S. media sources	Count of mentions in media headlines or abstract	Count
Independent Variables					
Firm-Level Regulatory Focus					
	Promotion Focus Word Occurrence	promo_value	Letters to Shareholders	LIWC word count %	Non-negative continuous
	Prevention Focus Word Occurrence	prev_value	Letters to Shareholders	LIWC word count %	Non-negative continuous
Product Introductions					
	Number of New Products	product_introductions	Ward's annual product data	Count of new models by mfg	Count
	Diversity of New Product Introductions	diversity	Ward's annual product data	Annual Herfindahl index of categorization of new models in predefined categories	Index (0 to 1)
	Deviation from Norms of New Product Introductions	deviation_from_norm	Ward's annual product data	Computation of squared difference between % of new product categories for focal firm vs. industry mean	Index (0 to 1)
Reliability of Product Performance	Product Recalls	recall_count	NHTSA annual database	Count by mfg	Count

Table 1. List of Variables, continued

Control Variables					
Firm-Level					
	Generalist vs. Specialist	engine_spread	Ward's annual product data	Difference between highest and lowest engine displacement	Non-negative continuous
	Firm Age	age	Firm annual reports	From founding year to focal year	Non-negative continuous
	Firm Size	firm_size	Compustat/Firm financials - annual	Natural log of total sales	Continuous
	Multiple Brand Firm	multi_brand_firm	Ward's data / Annual Reports	0 - single brand firm 1 - multiple brand firm	Dichotomous
	Home Region of Parent Firm	region	Annual Reports	1 - U.S. 2 - Europe 3 - Asia	Categorical
	Return on Assets	roa_annual	Compustat/Firm financials - annual	Net Inc./Total Assets	Continuous
	CEO Change	ceo_change	Firm financial reports/Company information	0 - No CEO change 1 - CEO change	Dichotomous
	CEO Age	ceo_age	Firm financial reports/Company information	Age of CEO	Continuous
	CEO Functional Background	ceo_background	Firm financial reports/Company information	1 - Financial 2 - Engineering 3 - Legal 4 - Marketing	Categorical
	CEO Prior Position	ceo_insider	Firm financial reports/Company information	0 - CEO from external position 1 - CEO from internal position	Dichotomous
Industry-Level					
	Industry Unit Volume	total_industry_volume	Ward's annual data	Natural log of industry unit sales	Continuous

Table 2. Descriptive Statistics

	CEO Regulatory Focus		New Model Introductions			Recalls	Firm Reputation		
	Promotion Focus	Prevention Focus	Number	Diversity	Deviation	All	Quality	Prominence WSJ	Prominence All
number	228	228	240	240	240	240	225	240	240
mean	1.561	0.197	19.646	0.164	0.001	46.350	3.869	39.725	1348.313
median	1.520	0.165	9.000	0.053	0.000	18.000	3.920	19.000	424.000
min	0.000	0.000	0.000	0.001	0.000	0.000	1.970	0.000	14.000
max	5.350	0.940	240.000	0.716	0.014	342.000	4.650	365.000	10560.000
sd	0.662	0.182	31.377	0.194	0.001	65.299	0.414	52.870	2113.943
variance	0.438	0.033	984.498	0.038	0.000	4264.019	0.172	2795.213	4468755.000
skewness	0.992	0.933	3.620	1.186	6.532	2.242	-0.906	2.335	2.011
kurtosis	7.029	3.840	19.645	3.016	53.747	7.502	4.773	9.939	6.169

Table 3. Correlations

	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Product Quality	3.87	0.41																				
2	Prominence - WSJ	39.73	52.87	-0.21 *																			
3	Prominence - All US Media	1348.3	2113.9	-0.17 *	0.86 *																		
4	New Models	19.65	31.38	-0.09	0.43 *	0.65 *																	
5	New Product Diversity	0.16	0.19	0.01	0.74 *	0.72 *	0.60 *																
6	New Prod. Dev. fr. Norms	0.00	0.00	-0.06	0.17 *	0.14 *	0.13 *	0.17 *															
7	Recalls by Model Year	46.35	65.30	-0.27 *	0.61 *	0.75 *	0.65 *	0.69 *	0.14 *														
8	Promotion Focus	1.56	0.66	0.10	0.02	0.00	-0.02	0.09	-0.08	0.00													
9	Prevention Focus	0.20	0.18	0.20 *	0.14 *	0.15 *	0.13 *	0.22 *	-0.02	0.04	0.00												
10	Number of Models	71.86	89.45	-0.11	0.73 *	0.88 *	0.83 *	0.81 *	0.10	0.73 *	0.05	0.20 *											
11	Engine Spread	2.77	1.97	-0.23 *	0.75 *	0.79 *	0.66 *	0.85 *	0.14 *	0.77 *	-0.06	0.11	0.84 *										
12	Firm Age	71.31	19.96	-0.08	0.34 *	0.47 *	0.40 *	0.31 *	0.05	0.31 *	-0.12	0.04	0.48 *	0.47 *									
13	CEO Age	58.36	8.77	0.03	-0.05	-0.12	-0.15 *	-0.07	-0.08	-0.17 *	0.22 *	-0.09	-0.14 *	-0.20 *	-0.25 *								
14	CEO Background	2.01	0.75	-0.07	-0.20 *	-0.32 *	-0.34 *	-0.26 *	-0.07	-0.37 *	-0.02	-0.02	-0.37 *	-0.35 *	-0.39 *	0.44 *							
15	CEO Change	0.18	0.38	0.05	0.08	0.03	-0.08	-0.03	-0.05	-0.02	0.10	0.03	-0.01	-0.01	-0.04	-0.18 *	-0.05						
16	CEO Insider	0.95	0.21	0.03	-0.15 *	-0.21 *	0.00	-0.10	0.03	0.08	-0.09	-0.18 *	-0.17 *	-0.12	-0.15 *	0.17 *	-0.10	-0.11					
17	Firm Size	24.47	1.09	-0.13 *	0.63 *	0.64 *	0.52 *	0.74 *	0.14 *	0.59 *	0.15 *	0.03	0.66 *	0.75 *	0.31 *	0.02	-0.26 *	-0.01	-0.06				
18	Multi-Brand Firm	0.44	0.50	-0.11	0.64 *	0.63 *	0.44 *	0.74 *	0.14 *	0.58 *	0.16 *	0.08	0.61 *	0.64 *	0.19 *	-0.03	-0.32 *	-0.04	-0.04	0.80 *			
19	Region	2.44	0.71	0.32 *	-0.59 *	-0.76 *	-0.57 *	-0.41 *	-0.12	-0.59 *	0.28 *	0.02	-0.68 *	-0.66 *	-0.64 *	0.33 *	0.39 *	0.05	0.16 *	-0.42 *	-0.37 *		
20	ROA	0.02	0.08	-0.03	0.12	0.03	-0.14 *	-0.02	0.02	-0.03	-0.05	-0.27 *	-0.06	0.01	0.11	0.00	0.12	0.08	0.07	-0.01	0.01	-0.07	
21	Industry Volume	16.55	0.15	0.06	-0.09	-0.02	0.04	-0.06	0.03	0.19 *	0.04	0.09	-0.08	-0.07	-0.12	-0.13 *	-0.04	0.05	0.11	-0.10	0.00	0.00	-0.04

* $p < 0.05$
n = 240

Table 4. New Model Introductions

	Controls			New Model Introductions							
				Number			Diversity			Deviation fron Norms		
	Model 1			Model 2			Model 3			Model 4		
Variables	IRR[a]		Rob. s.e.	IRR[a]		Rob. s.e.	IRR[a]		Rob. s.e.	IRR[a]		Rob. s.e.
Number of Models	1.006	**	(0.00)	1.006	**	(0.00)	1.000		(0.00)	0.996		(0.00)
Engine spread	0.975		(0.08)	0.970		(0.08)	1.034		(0.06)	0.658		(0.25)
Firm age	1.009		(0.02)	0.982		(0.03)	1.014		(0.01)	0.863		(0.09)
CEO age[b]	1.010		(0.01)	0.998		(0.01)	1.001		(0.01)	0.942		(0.04)
CEO function - Engr[b]	0.921		(0.21)	1.090		(0.26)	0.847		(0.09)	0.537		(0.28)
CEO function - Admin[b]	1.267	†	(0.17)	1.255		(0.25)	1.345	**	(0.09)	1.766		(0.90)
CEO function - Marketing[b]	0.151	**	(0.07)									
CEO change[b]	0.919		(0.12)	0.901		(0.06)	0.965		(0.03)	0.787		(0.38)
CEO insider[b]	2.010	**	(0.35)	1.961	**	(0.45)	0.807	†	(0.09)	0.402		(0.30)
Firm size	1.919	**	(0.43)	1.762	†	(0.55)	1.368	**	(0.13)	4.130		(3.70)
ROA	3.712	**	(1.61)	3.554	*	(1.98)	0.665	*	(0.11)	1.640		(2.87)
Industry volume	1.215		(0.38)	0.627		(0.28)	0.846		(0.19)	0.171		(0.22)
Promotion focus[b]				1.191	**	(0.08)	0.988		(0.03)	0.661	†	(0.16)
Prevention focus[b]				0.641	**	(0.09)	1.014		(0.07)	1.590		(1.12)
Observations	227			206			206			206		
Groups	16			16			16			16		
Wald χ^2	2016.4	**		1959.1	**		1136.2	**		921.1	**	
Log pseudolik.	-1057.1			-797.8			-50.0			-0.3		
AIC	2138.2			1621.7			126.1			26.6		

[a] IRR coefficient represents the exponentialized version of the coefficient.

[b] Variables lagged.

** p < .01 * p < .05 † p < .10

Table 5. Error Avoidance Behavior - All Recalls

	Controls		All Recalls	
	Model 1		Model 2	
Variables	IRR[b]	Rob. Std. Err.	IRR[a]	Rob. Std. Err.
Number of Models	0.999	(0.00)	1.000	(0.00)
Engine spread	1.095 *	(0.04)	1.050 †	(0.03)
Firm age	0.944 **	(0.01)	0.945 **	(0.01)
CEO age[b]	0.987	(0.01)	1.001	(0.01)
CEO function - Engr[b]	0.946	(0.12)	0.895	(0.13)
CEO function - Admin[b]	0.516 **	(0.11)	0.426 **	(0.08)
CEO function - Marketing[b]	0.485 *	(0.17)		
CEO change[b]	0.970	(0.09)	1.029	(0.06)
CEO insider[b]	1.775 **	(0.23)	2.338 **	(0.29)
Firm size	1.348 †	(0.22)	1.155	(0.17)
ROA	3.162 **	(1.04)	4.313 **	(1.57)
Industry volume	3.262 **	(0.99)	3.340 **	(1.10)
Promotion focus[b]			0.966	(0.04)
Prevention focus[b]			0.783 *	(0.08)
Observations	227		206	
Groups	16		16	
Wald χ^2	18267.2 **		7466.8 **	
Log pseudolik.	-958.1		-855.6	
AIC	1940.3		1737.2	

[a] IRR coefficient represents the exponentialized version of the coefficient.

[b] Variables lagged.

** p < .01 * p < .05 † p < .10

Table 6. Firm Reputation

	Firm Reputation									
	Controls - Quality		**Product Quality**		**Controls - Prominence**		**Prominence - WSJ**		**Prominence - All**	
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coeff.	Rob. s.e.	Coeff.	Rob. s.e.	IRR[a]	Rob. s.e.	IRR[a]	Rob. s.e.	IRR[a]	Rob. s.e.
Number of models	0.000	(0.00)	0.000	(0.00)	0.999 †	(0.00)	1.003 **	(0.00)	1.000	(0.00)
Reputation 1-year lag	0.712 **	(0.07)	0.716 **	(0.07)	1.004 **	(0.00)	1.002 **	(0.00)	1.000	(0.00)
Engine spread	-0.031 †	(0.02)	-0.035 †	(0.02)	1.007	(0.10)	1.064	(0.08)	0.977	(0.03)
Firm age	0.004	(0.01)	0.005	(0.01)	0.995	(0.01)	0.979	(0.02)	0.987 *	(0.01)
CEO age[b]	0.000	(0.00)	0.001	(0.00)	0.995	(0.01)	1.005	(0.01)	0.994	(0.00)
CEO function - Engr[b]	0.001	(0.03)	-0.011	(0.03)	0.975	(0.12)	1.098	(0.18)	1.010	(0.08)
CEO function - Admin[b]	-0.036 *	(0.02)	0.021	(0.03)	0.567 **	(0.05)	0.844	(0.11)	0.767 *	(0.10)
CEO function - Marketing[b]	0.078	(0.18)			25.849 **	(8.21)				
CEO change[b]	0.020	(0.02)	-0.024	(0.01)	1.072	(0.10)	1.076	(0.10)	1.009	(0.05)
CEO insider[b]	0.030	(0.05)	-0.022	(0.03)	0.965	(0.12)	1.490 **	(0.20)	0.998	(0.07)
Firm size	-0.025	(0.08)	-0.027	(0.08)	1.208	(0.17)	1.213	(0.31)	1.237	(0.18)
ROA	-0.204	(0.19)	-0.277	(0.17)	0.078 **	(0.02)	0.060 **	(0.02)	0.256 **	(0.05)
Industry volume	0.289 **	(0.07)	0.285 **	(0.06)	0.890	(0.18)	0.742	(0.19)	0.911	(0.25)
Constant	-3.253 †	(1.85)	-3.245 †	(1.68)						
All recalls			0.001 *	(0.00)			1.002	(0.00)	1.002 *	(0.00)
New Model Count			0.000	(0.00)			0.995 **	(0.00)	0.998 **	(0.00)
Diversity			-0.015	(0.19)			0.712	(0.24)	1.480	(0.52)
Deviation			-4.973	(4.19)			1.2E+09 **	(8.1E+09)	0.106	(0.56)
Promotion focus[b]			0.004	(0.01)			1.074	(0.09)	1.075 †	(0.04)
Prevention focus[b]			-0.043	(0.04)			1.596 *	(0.37)	1.517 **	(0.12)
Observations	206		202		214		206		206	
Groups	16		16		16		16		16	
AIC	-406.2		-407.3		1834.1		1669.6		8544.2	

[a] IRR coefficient represents the exponentialized version of the coefficient.

[b] Variables lagged.

** p < .01 * p < .05 † p < .10

Table 7. Mediation Analysis

Preacher & Hayes Multiple Regression (Bootstrap: 5,000 Iterations)									95% Conf. Interval		
Indep. Variable	Mediating Variable	Dependent Variable	a coeff	b coeff	Indirect Effect	Direct Effect	c coeff	Bootstrap Coeff.	Low	High	Mediation
Promotion Focus 1year lag											
	New Model Intro	Prominence - WSJ	2.706	-0.627 **	-1.696	0.169	-1.527	-1.696	-3.938	-0.030	Full
		Prominence - All	2.706	-13.994 **	-37.872	-145.471	-183.343 †	-37.872	-99.505	12.882	
	Diversity	Prominence - WSJ	0.017 †	87.770 **	1.527	-3.054	-1.527	1.527	-0.171	4.344	
		Prominence - All	0.017 †	-853.52	-14.852	-168.492	-183.343 †	-14.852	-55.558	9.513	
	Deviation	Prominence - WSJ	0.000	3800.1 **	-0.476	-1.051	-1.527	-0.476	-1.639	0.859	
		Prominence - All	0.000	81270.6 †	-10.180	-173.164	-183.343 †	-10.180	-38.592	20.414	
Prevention Focus 1year lag											
	Recalls - All	Product Quality	-32.405 *	-0.003 **	0.082	0.278 *	0.360 **	0.082	0.020	0.174	Partial

Table 8. Summary of Hypotheses

				Support (Primary Analysis in Bold)		
Hypotheses	**Dep. Variable**	**Predictor**	**Predicted Direction**	**1 Year Lag**	**2 Year Lag**	**3 Year Lag**
Hypothesis 1	New Model Count	CEO Promotion Focus	+	**Yes**	No	No
Hypothesis 2	New Model Count	CEO Prevention Focus	-	**Yes**	No	No
Hypothesis 3	Product Intro. Diversity	CEO Promotion Focus	+	**No**	No	No
Hypothesis 4	Product Intro. Diversity	CEO Prevention Focus	-	**No**	No	No
Hypotheses 5	Product Intro. Deviation from Norms	CEO Promotion Focus	+	**No**	No	Yes
Hypothesis 6	Product Intro. Deviation from Norms	CEO Prevention Focus	-	**No**	No	No
Hypothesis 7	Total Product Recalls	CEO Prevention Focus	-	**Yes**	Yes	No
Hypothesis 8a	Prominence - WSJ	CEO Promotion Focus	+	**No**	Yes	No
	Prominence - All Media	CEO Promotion Focus	+	**No**	No	No
Hypothesis 8b	Prominence - WSJ Mediator New Product Introductions	CEO Promotion Focus	+	**Yes**	No	No
	Prominence - All Media Mediator New Product Introductions	CEO Promotion Focus	+	**No**	No	No
Hypothesis 9a	Product Quality	CEO Prevention Focus	+	**No**	No	No
Hypothesis 9b	Product Quality Mediator Product Recalls	CEO Prevention Focus	+	**Yes**	Yes	No

Table 9. Summary of Sensitivity Analysis

DV	Model Type	Promotion Focus			Prevention Focus		
New Product Introductions		1 year lag	2 year lag	3 year lag	1 year lag	2 year lag	3 year lag
New Model Count	Poisson - IRR	1.191 (p <.01) **increase**	.943 (n.s.)	.981 (n.s.)	.641 (p <.01) **decrease**	1.508 (n.s.)	.676 (n.s.)
New Model Diversity	Poisson - IRR	.988 (n.s.)	.953 (p<.05) **decrease**	1.009 (n.s.)	1.014 (n.s.)	1.013 (n.s.)	.931 (n.s.)
New Model Intro. Deviation from Norms	Poisson - IRR	.661 (p<.10) **decrease**	1.726 (n.s.)	1.570 (n.s.)	1.590 (n.s.)	1.206 (n.s.)	2.318 (n.s.)
Recalls - Counts							
All Recalls	Poisson - IRR	.966 (n.s.)	.984 (n.s.)	.978 (n.s.)	.783 (p<.05) **decrease**	.773 (p<.05) **decrease**	.826 (n.s.)
Direct Relationship Between Regulatory Focus & Reputation							
		Promotion Focus			**Prevention Focus**		
		1 year lag	2 year lag	3 year lag	1 year lag	2 year lag	3 year lag
Product Quality	Linear	.004 (n.s.)	-.008 (n.s.)	.002 (n.s.)	-.043 (n.s.)	-.041 (n.s.)	-.047 (n.s.)
Prominence - WSJ	Poisson - IRR	1.074 (n.s.)	1.170 (p<.05) **increase**	1.069 (n.s.)	1.596 (p<.05) **increase**	.643 (p<.05) **decrease**	.757 (n.s.)
Prominence - All US Media	Poisson - IRR	1.075 (p<.10)	1.049 (p<.10) **increase**	.995 (n.s.)	1.517 (p<.01) **increase**	.924 (n.s.)	.930 (n.s.)

Note: Reputation regressions incorporate 1-year lags of reputation DV.

Table 9. Summary of Sensitivity Analysis, continued

Mediation Testing - 5000 iterations			Indir. Effect Bootstrap	95% Conf. Int.			
Independent Variable	Mediating Variable	Dependent Variable	Coeff.	Low	High	c coeff	Mediation
Promotion Focus - 2year lag	New Model Intro	Prominence - WSJ	1.4245	-0.8904	4.3824	4.4047	No
		Prominence - All	36.7916	-25.0675	124.5931	-70.7294	No
	Diversity	Prominence - WSJ	1.2304	-0.0276	4.2777	4.4047	No
		Prominence - All	-27.5391	-79.9778	4.9969	-70.7294	No
	Deviation	Prominence - WSJ	1.3983	-0.1060	5.0984	4.4047	No
		Prominence - All	28.0249	-4.7775	109.4399	-70.7294	No
Promotion Focus - 3year lag	New Model Intro	Prominence - WSJ	1.5331	-1.2954	4.6245	3.0482	No
		Prominence - All	35.3568	-28.4888	113.1324	-112.4430	No
	Diversity	Prominence - WSJ	1.4151	-0.1800	4.6113	3.0482	No
		Prominence - All	-33.6089	-89.9432	6.9390	-112.4430	No
	Deviation	Prominence - WSJ	0.5668	-1.5066	2.1079	3.0482	No
		Prominence - All	17.0435	-42.4671	63.6794	-112.4430	No
Prevention Focus - 2year lag	Recalls - All	Product Quality	0.0547	0.0069	0.1377	0.2795 *	Partial
Prevention Focus - 3year lag	Recalls - All	Product Quality	0.0110	-0.0150	0.0578	0.2293 †	No

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